



LEGEND			
ZONING	QTY	HA	%
Open Space Zone II	3	0.9299	8.42
Business Zone VI	1	0.9930	8.99
Industrial Zone I	5	4.6181	41.82
Transport Zone II	4	0.8134	7.37
Agriculture Zone I	1	3.6889	33.40
Proposed new Servitude Areas			
TOTAL	14	11,0433	100

- NOTES
1. Sizes and dimensions are approximate and subject to final survey.
 2. 0.5m contour intervals as surveyed by VPM Surveys.
 3. For property data, refer SG 5385/1945
 4. Proposed new Trunk Road (TR 89) proclaimed in PN 7376 of 10 Apr 2015.
 5. Proposed Phasing indicated in red line
 6. Proposed Street Names & Numbers indicated in blue
 7. the line abcd represents a 10m wide right of way servitude accross Portion 139 of Farm 208 from the R102 to Erf no 8.

PLAN 5

PHASING PLAN

Portion 4 of the Farm
Gwayang No 208,
Division George

APPROVED IN TERMS OF SECTION 23(1) OF THE
GEORGE MUNICIPALITY'S BY-LAW ON
MUNICIPAL PLANNING AS PUBLISHED IN
P.N. 7481/2015 ON 1 SEPTEMBER 2015

MUNICIPAL MANAGER

DATE: _____

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PLAN DATE: 2 August 2021
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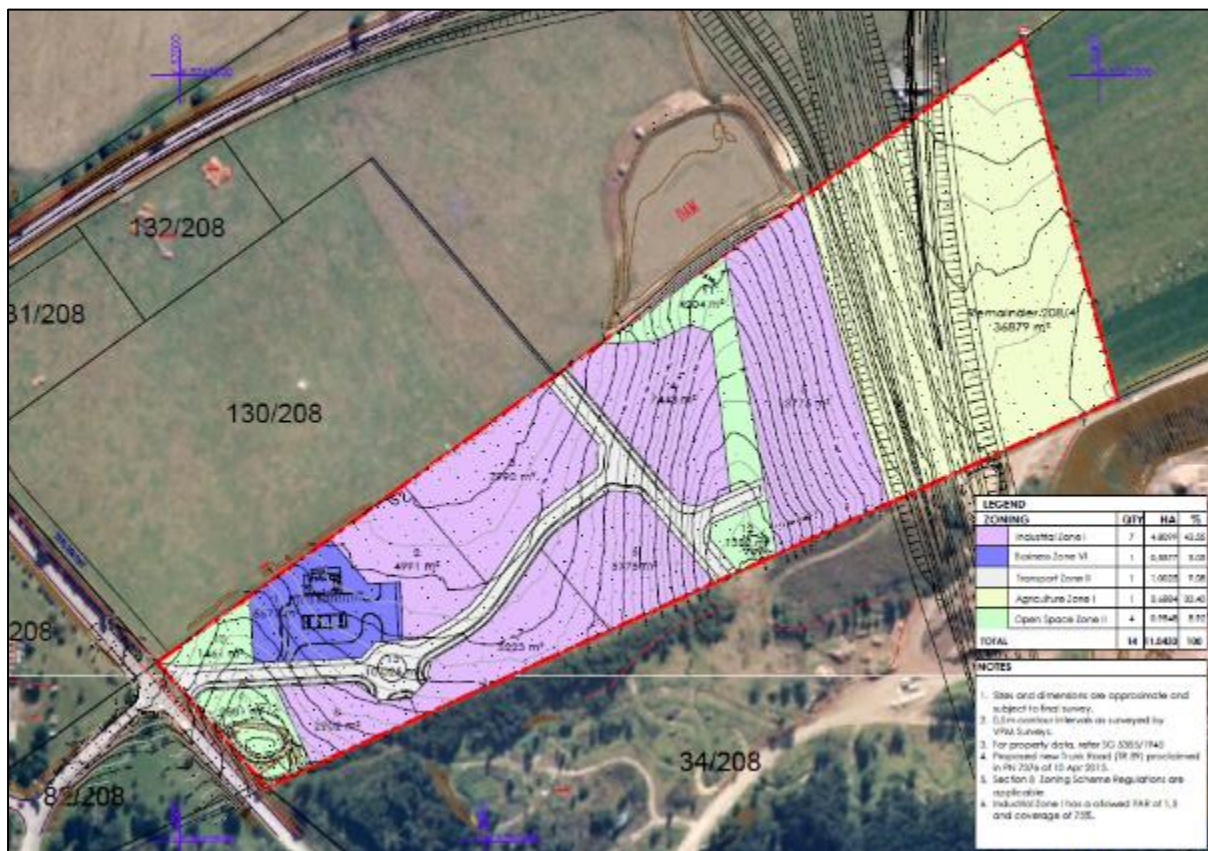
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Annexure "A"

PORTION 4 OF THE FARM GWAYANG NO 208, DIVISION GEORGE, GEORGE MUNICIPALITY

APPLICATION FOR SUBDIVISION & REZONING



CLIENT:
PREPARED BY:

8 MILE INVESTMENTS 236 (PTY)LTD
MARIKE VREKEN URBAN AND ENVIRONMENTAL PLANNERS



AUGUST 2018

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SECTION A :**BACKGROUND****1. BACKGROUND**

Portion 4 of the Farm Gwayang No 208 is deemed to be zoned "Agriculture Zone I" in terms of the George Integrated Zoning Scheme Bylaw (2017). The subject property is approximately 11.0433ha in extent.

The application area is located on the eastern side of Main Road 347, between the Old National Road (R102) to George and the N2 National Road. The application area is approximately 350m south of the Old National Road and opposite the current entrance to the George Airport. The proposed and authorised new western bypass road is aligned along the eastern boundary of the application area.



FIGURE 1: PORTION 4 OF THE FARM GWAYANG NO 208

The property is currently vacant and used as grazing for cattle.

Marike Vreken Urban and Environmental Planners has been appointed by **8 Mile Investments 236 (Pty) Ltd** to apply to the George Municipality to obtain development rights to develop Portion 4 of the Farm Gwayang No 208 George for a new service station; warehousing, and Airport Support Services (Industrial Zone I). Refer to **ANNEXURE B** for a copy of the Power of Attorney and Company Resolution.

During a pre-application consultation meeting that was held with the George Municipality, it was established that the current George SDF earmarks the land between the Western Bypass and the

airport for airport related land uses – the proposed development could therefore be supported in principle.

1.1. Pre-Application Consultation

Two Pre-application consultation meetings were held with George Municipality. These were on 8 September 2016 and 29 January 2018.

The original proposal was to subdivide the application area into three (3) Portions: (Portion A (*service station*)); Portion B = Business Site and a Remainder. During the September 2016 pre-application consultation meeting, officials from the George Municipality indicated that business property is not supported on this area, and that the owner should rather focus on the development of airport related services, as recommended in the applicable precinct plan. Hence the reason to rather replace the commercial use with warehousing facilities.

A further pre-application consultation meeting was held with the George Municipality as well as the Department of Environmental Affairs and Development Planning during January 2018. A copy of the minutes of this meeting is attached as **ANNEXURE C**.

2. THE APPLICATION

The owners of Portion 4 of the Farm Gwayang No 208 (hereafter referred to as “the application area”) envisage developing a new service station on a portion of Portion 4 of the Farm Gwayang No 208. The development entails a new fillings station with associated uses such as a service station shop and parking.

Marike Vreken Urban and Environmental Planners were appointed by **8 MILE INVESTMENTS 236 (PTY)LTD** (refer **ANNEXURE B**: Power of Attorney & Company Resolution and **ANNEXURE A**: Application Form) to prepare and submit the required application documentation for:

- (i) The rezoning of Portion 4 of the Farm Gwayang No 208 from “Agriculture Zone I” to “Subdivisional Area” in terms of Section 15(2)(a) from the Land-Use Planning By-Law for George Municipality, 2015.
- (ii) The subdivision of Portion 4 of the Farm Gwayang No 208 into 14 Portions (7 x Industrial Zone I portions; 1 x Business Zone VI portion; 1 x Transport Zone II portion; 4 x Open Space Zone II portions & 1 x Agriculture Zone I portion (the Remainder)) in terms of Section 15(2)(d) from the Land-Use Planning By-Law for George Municipality, 2015;

2.1. Applications in Terms of other Legislation

The proposed development does require Environmental Authorisation, as well as approval in terms of Act 70 of 1970.

Cape EAPrac Environmental Management Practitioners has been appointed to apply for Environmental Authorisation for the proposed development, and a simultaneous application approval in terms of the Subdivision of Agricultural Land Act, 1970 (Act 70 of

1970). The assessment is still in process and a decision regarding the EIA would be received in due course.

3. PROPERTY DESCRIPTION, SIZE AND OWNERSHIP

A copy of the Title Deed & Windeed Copy which includes all the information outlined below is contained in **ANNEXURE D**. The Surveyor General Diagrams (SG 5385/1945) for the application area is contained in **ANNEXURE E**.

Title Deed Number:	T10434/2010
Title Deed Description:	Remainder of Portion 4 of the Farm Gwayang No 208, in the Municipality and Division of George, Western Cape Province
Property Owner:	8 MILE INVESTMENTS 236 (PTY) LTD Registration No. 2004/029922/07
Title Deed Restrictions:	There are no title deed restrictions that prevent the proposed development.
Bonds:	There is no bond registered over the property
Property Size:	11,0433 ha (Eleven Comma Zero Four Three Three) Hectares
Servitudes:	There are no servitudes registered on the property.

SECTION B :**DEVELOPMENT PROPOSAL****4. DEVELOPMENT SPECIFICATIONS***(Plan 2: Layout Plan)***4.1. Proposed Development**

The property owner wishes to obtain development rights to develop Portion 4 of the Farm Gwayang No 208 George for a new service station; warehousing, and Airport Support Services (Industrial Zone I).

The proposal would require the applicable subdivision and rezoning applications in order to obtain the desired development rights.

The development proposal is to rezone the application area to "Subdivisional Area" (defined as an overlay zone that permits subdivision for the purposes of a subdivision application involving a change of zoning, in the George Municipal Land Use Planning By-Law); and to subdivide the application area into fourteen (14) portions:

- 7x "Industrial Zone I" erven for warehouse and light industrial purposes;
- 1x "Business Zone VI" erf for a service station with convenience shop;
- 1x "Transport Zone II" erf for a public street;
- 4x "Open Space Zone II" erven for private open space purposes; and
- 1x Remainder which zoning will remain "Agriculture Zone I".

The proposed development will also be a phased development; **Phase 1** being the service station and **Phase 2** being the industrial zoned erven.

The following development principles were taken into consideration during the formulation of the layout plan (Site Development Plan):

- No development on slopes steeper than 1:4;
- Supports the expansion of airport related land uses that is consistent with the George SDF and Gwayang Local SDF;
- Promoting development within the sub-regional industrial node which is in close proximity to the N2 and airport;
- Promoting development in a "Airport Support Zone" as identified in George Airport Corridor Study, supports airport facilities;
- To provide a necessary service to the community;
- To be as environmental sensitive as possible;
- To strengthen and support the Airport Node.

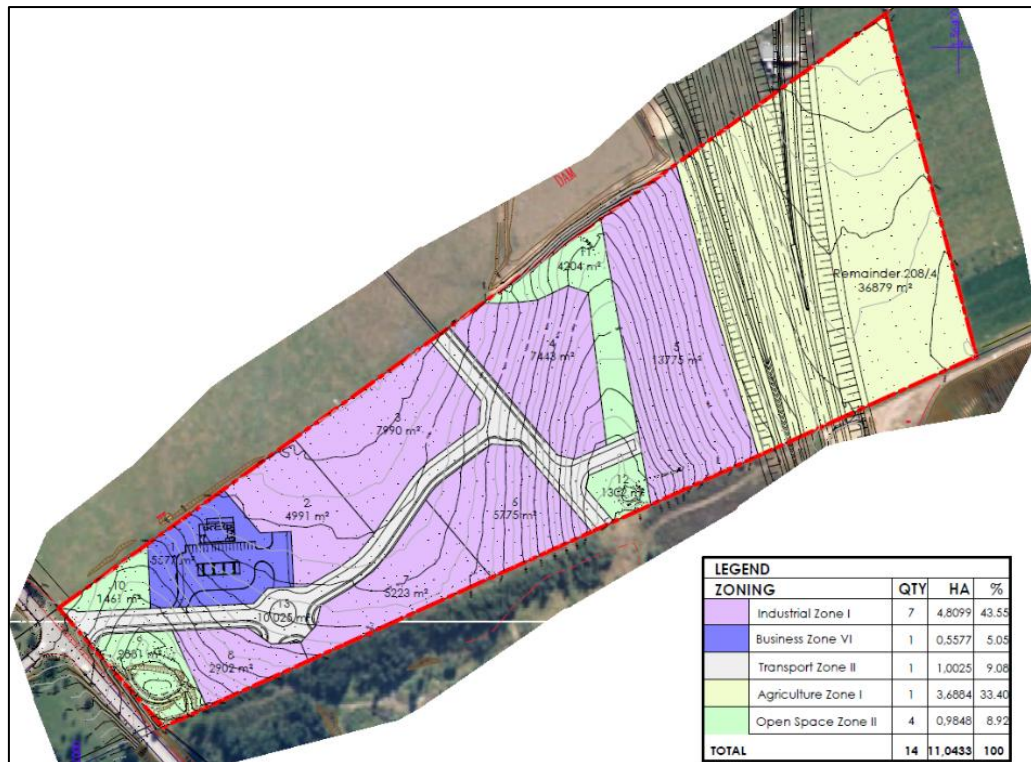


FIGURE 2: SITE DEVELOPMENT PLAN

The proposed development consists of the following as shown in Figure 2 above:

- A phased development; **Phase 1** being the service station and **Phase 2** being the industrial zoned erven;
- The proposed service station will include a convenience shop with a quick service restaurant / take-away with limited seating, toilets and an information centre;
- A proposed traffic circle at the existing entrance to the George Airport;
- The "Industrial Zone I" erven will be used for warehousing and airport support services;
- The "Agriculture Zone I" erf (the Remainder) will allow for the proposed by-pass;
- The "Open Space Zone II" erven will allow for the natural water courses to be undisturbed;
- Access to the proposed development will be via the proposed new traffic circle.

5. STATUTORY SPECIFICATIONS

5.1. Rezoning

Portion 4 of the Farm Gwayang No 208 is currently zoned "Agriculture Zone I" in terms of the George Integrated Zoning Scheme Bylaw (2017). In order to allow the proposed subdivision with associated uses, it is necessary to rezone the subject property from "Agriculture Zone I" to "Subdivisional Area".

As per the George Integrated Zoning Scheme By-Law a "Subdivisional Area Overlay Zone" is defined:

The subdivisional area overlay (SAO) zoning designates land for future subdivision with development rights by providing development directives through specific conditions as approved in terms of this By-law. The SAO zoning confirms the principle of development and acceptance of future subdivision of land; but not the detailed layout, which will be determined when an actual application for subdivision is approved.

Land zoned as a subdivisional area may be subdivided as contemplated in the Municipal Planning By-Law. The accompanied subdivision application sets out the desired zonings / land uses as proposed on the Site Development Plan.

5.2. Subdivision

The proposal is to develop a service station (service station) on a portion of the subject property (Portion 4 of the Farm Gwayang No 208). The property will be subdivided into (14) portions:

- (1) – Business Zone VI erf (*Service Station*)
- (7) – Industrial Zone I erven (*Warehousing and Airport Related Uses*)
- (1) – Transport Zone II erf (*Road*)
- (4) – Open Space Zone II erven (*Landscaping & Private Open Space*)
- (1) – Agriculture Zone I erf (Remainder of Property)

According to the George Integrated Zoning Scheme Bylaw (2017) the zoning that would allow for the use of a service station is 'Business Zone VI'.

The portion of the new public road needs to be zoned as 'Transport Zone II'. The area where a dam is currently situated will be rezoned to 'Open Space Zone II', other landscaped areas and drainage areas will be appropriately landscaped and will also have a 'Open Space Zone II' zoning. The (7) erven to be used for warehouse purposes and airport related services will be rezoned to 'Industrial Zone I'.

The remainder of the property will remain 'Agriculture Zone I'. This portion of land has been earmarked as land where the future Western Bypass will be constructed, and may be expropriated in the future for road purposes.

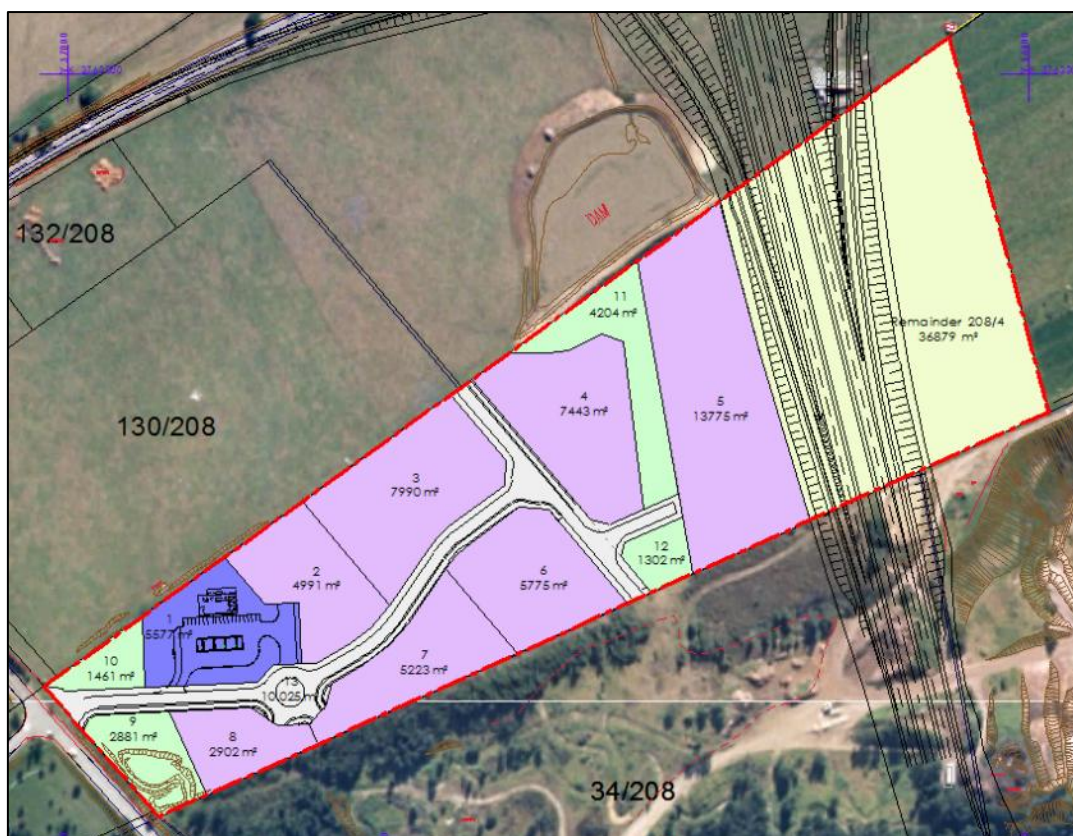


FIGURE 3: PROPOSED SUBDIVISION

George Integrated Zoning Scheme Bylaw (2017)

The George Integrated Zoning Scheme Bylaw (2017) prescribes specific development parameters applicable to the various proposed land uses. Failing to adhere to these development parameters will result in additional departure applications. The tables below are a summary of the prescribed development parameters for a "Business Zone VI", "Industrial Zone I", "Transport Zone II", "Open Space Zone II" & "Agriculture Zone I" zoned properties as set out in the George Integrated Zoning Scheme Bylaw (2017) and a comparison of how the proposed development's compliancy with the prescribed development parameters:

(It should be noted, the purposes of this application is to propose the intended zonings as per the proposed subdivision; detailed development parameters of the exact land use on the subdivided portions will need to be submitted when a SDP is submitted for the intended use on the subdivided portions)

Business Zone VI

The table below is a summary of the prescribed development parameters for a "**Business Zone VI**" zoned property as set out in the George Integrated Zoning Scheme Bylaw (2017):

George Integrated Zoning Scheme Bylaw (2017)		Proposed Development	Compliance
Business Zone VI			
Primary Use	Service Station	Service Station	Comply
Floor Factor	At most 1	Detailed SDP with development parameters will be submitted at a later stage, when actual development is proposed.	
Coverage	At most 75%		
Height	12m to the top of the roof		
Setback	8m from centre line of the abutting public street or streets		
Street Building Line	The street boundary building line is 0 metres, for service stations, the street boundary building line is 5 metres subject to the general building line encroachments in this by-law.		
Side Building Line	The side and rear boundary building lines are 0 metres.		
Parking	4 per repair bay Minimum of 8 bays Plus 4 bays per 100 m² GLA		
George Integrated Zoning Scheme Bylaw (2017)			
(The following additional development parameters apply for Service Stations)			
A site development plan must be submitted to the Municipality for its approval. The site development plan must at least address matters pertaining to vehicle access, risk management of fuel pumps and fuel storage areas, screening and minimising any visual intrusion or operational disturbance with adjoining properties.			
Any part of the property of a service station which is used for the repair of motor vehicles, the storage of inoperable motor vehicles or parts of motor vehicles, empty containers including oil drums and packing cases, or any other scrap, must be enclosed by a solid screen wall at least 2 metres high, or contained within a building.			

George Integrated Zoning Scheme Bylaw (2017) <i>Business Zone VI</i>	Proposed Development	Compliance
<p>Any service station must comply with the following access requirements:</p> <p>(i) the width of motor vehicle carriageway crossings over the street boundary, whether one-way or two-way, may not exceed 8 metres;</p> <p>(ii) a wall, at least 100 millimetres thick and 350 millimetres high, must be erected on the street boundary between different motor vehicle carriageway crossings, and the wall must continue along the boundary unless the property is otherwise enclosed;</p> <p>(iii) the motor vehicle carriageway crossings must be limited to two per site unless the total length of a street boundary exceeds 30 metres, in which case one additional motor vehicle carriageway crossing may be permitted;</p> <p>(iv) at the point where it crosses the street boundary, a motor vehicle carriageway crossing may not be closer than—</p> <p>aa) 30 metres to the intersection of a provincial road and with any other road of a similar status;</p> <p>bb) 30 metres to the nearest point of an intersection where traffic is controlled, or is proposed to be controlled, by a traffic signal or traffic island;</p> <p>cc) 10 metres from the corner of an intersection not referred to in items (aa) or (bb) if such intersection is not splayed, or 5 metres from the point where the splay meets the road boundary if such intersection is splayed; and</p> <p>dd) 1,5 metres from a side boundary.</p> <p>No fuel pump may be erected so that the base or island on which the pump stands is less than 3,5 metres from the nearest street boundary.</p>		<p><i>Detailed SDP with development parameters will be submitted at a later stage, when actual development is proposed.</i></p>

A service station is proposed on the "Business Zone VI" erf; a "Service Station" is considered a primary land use right on a "Business Zone VI" zoned property.

"service station" means property for the retail supply of fuel, and—

- a) may include uses such as washing of vehicles, a convenience shop and a restaurant; and
- b) does not include spray-painting, panel beating, motor repair garage, open air motor vehicle display or truck stop.



FIGURE 4: FUEL (SERVICE) STATION ON BUSINESS ZONE VI ERF

The development proposal is to construct a service station with associated uses. The SDP indicate that there will be (4) Fuel Pumps, (3) Fuel Tanks, (19) Parking Bays and (1) Service Station Shop; which will include a quick service restaurant / take-away with limited seating, toilets and an information centre.

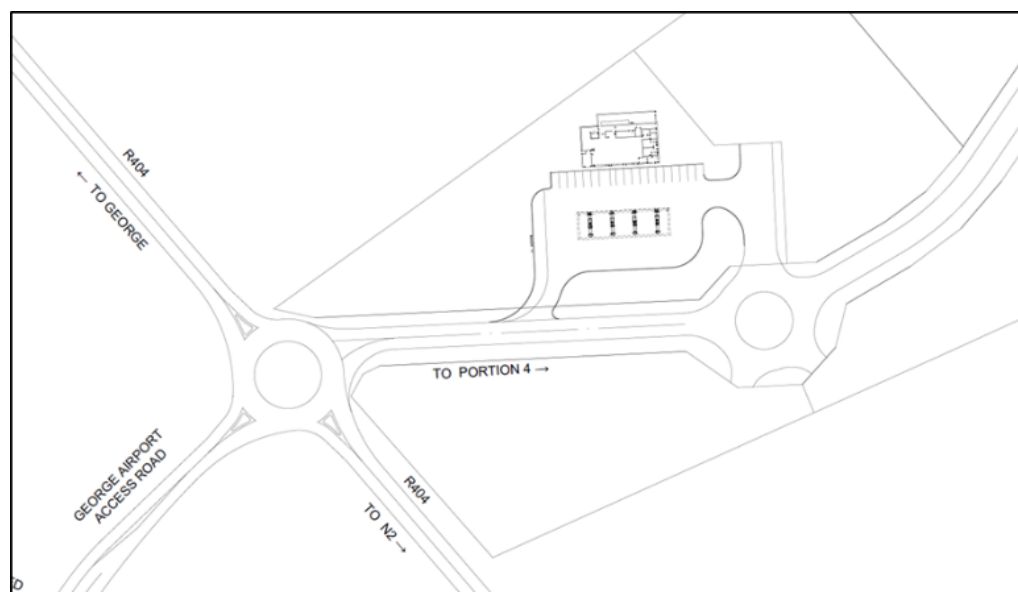


FIGURE 5: SITE DEVELOPMENT PLAN – SERVICE STATION & TRAFFIC CIRCLE

Industrial Zone I

The table below is a summary of the prescribed development parameters for a “**Industrial Zone I**” zoned property as set out in the George Integrated Zoning Scheme Bylaw (2017):

George Integrated Zoning Scheme Bylaw (2017) (Industrial Zone I)		Proposed Development	Compliance
Primary Use	Light Industry <ul style="list-style-type: none"> - manufacturing that is less capital-intensive and requires less machinery - warehousing 	Warehousing Airport related uses	Comply
Floor Factor	At most 1.5	<p><i>Detailed SDP with development parameters will be submitted at a later stage, when actual development is proposed.</i></p>	
Coverage	At most 75%		
Height	No building may exceed a height of two storeys		
Street Building Line	The street building line is at least 5 metres.		
Side Building Line	The side building line is at least 3 metres.		
Rear building Line	The rear building line is at least 3 metres.		
Boundary walls	Where a land unit has a common boundary with another land unit which is not zoned for industrial purposes, the Municipality may require a 1.8 metre-high wall to be erected to the satisfaction of the Municipality, along the common boundary.		
Parking	2 bays per 100 m ² GLA		
Loading bays	Floor area (m ²) – 5 001–10 000 (3 bays) Every additional 10 000 or part thereof (1 additional bay)		

Properties zoned "Industrial Zone I" is proposed to allow for warehousing and airport related uses. The primary land use right on "Industrial Zone I" zoned properties is "Light Industry".

It is important to note that the intention is to use the properties for warehousing purposes and not manufacturing. However, the new George Integrated Zoning Scheme By-Law does not have a separate zoning category for "warehousing" and the only zoning category where warehousing is allowed as a primary land use rights, is "Industrial zone I". A warehouse is allowed as consent uses in business zones, but during the pre-application consultation meetings with George Municipality during September 2016, it was clearly stated that the municipality will not support business / retail zonings in this area. This area should be used for Airport support services, and not retail purposes. Hence it was decided to apply for an "Industrial Zone I" zoning. There will be no objection from the applicant, if the land use rights on the "Industrial Zone I" properties are limited to warehousing, freight and logistics related land uses.

"light industry" means—

- a) an industry, not being a hazardous or offensive industry or involving use of hazardous or offensive storage establishment, in which the processes carried on, the transportation involved or the machinery or materials used do not interfere with the amenity of the neighbourhood by reason of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil, or otherwise;
- b) involves manufacturing that is less capital-intensive and requires less machinery than other types of manufacturing; and
- c) includes—
 - i. the manufacturing of consumer products, including electronics and clothing;
 - ii. warehousing;
 - iii. industrial hive;
 - iv. service trade;
 - v. service station;
 - vi. restaurant; and
 - vii. open air motor vehicle display

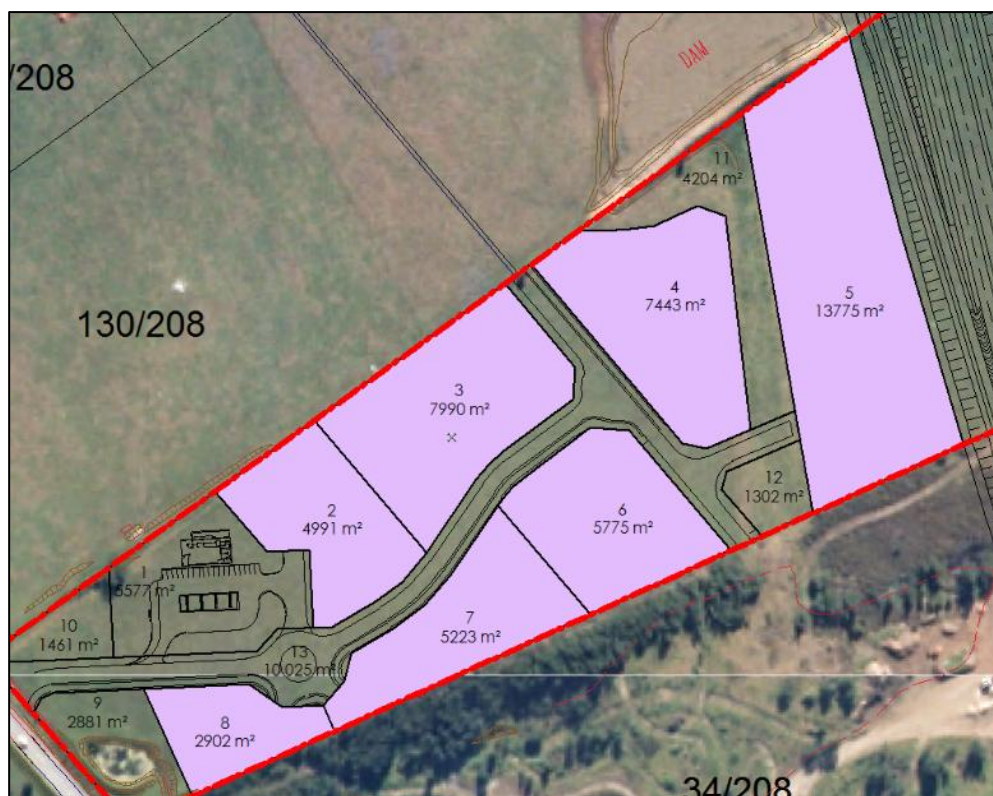


FIGURE 6: INDUSTRIAL ZONE I ERVEN

Open Space Zone II

The table below is a summary of the prescribed development parameters for a “**Open Space Zone II**” zoned property as set out in the George Integrated Zoning Scheme Bylaw (2017):

George Integrated Zoning Scheme Bylaw (2017) (Open Space Zone II)		Proposed Development	Compliance
Primary Use	Private Open Space	Private Open Space	Comply
The following development parameters apply			
(a) The Municipality must require a site development plan to be submitted for its approval.		See proposed SDP	Comply
b) The site development plan as approved by the Municipality constitutes the development parameters for a primary use, if applicable, and a consent use.		n/a	n/a

The primary land use right for “Open Space Zone II” zoned properties is “Private Open Space”, which is defined as:

“private open space” means land not designated as public open space which is used primarily as a private site for sport, play, rest or recreation, or as a park or nature conservation area and —

- a) includes ancillary buildings, infrastructure, and public land which is or will be leased on a long term basis; and
- b) does not include shops, restaurants and gymnasiums.

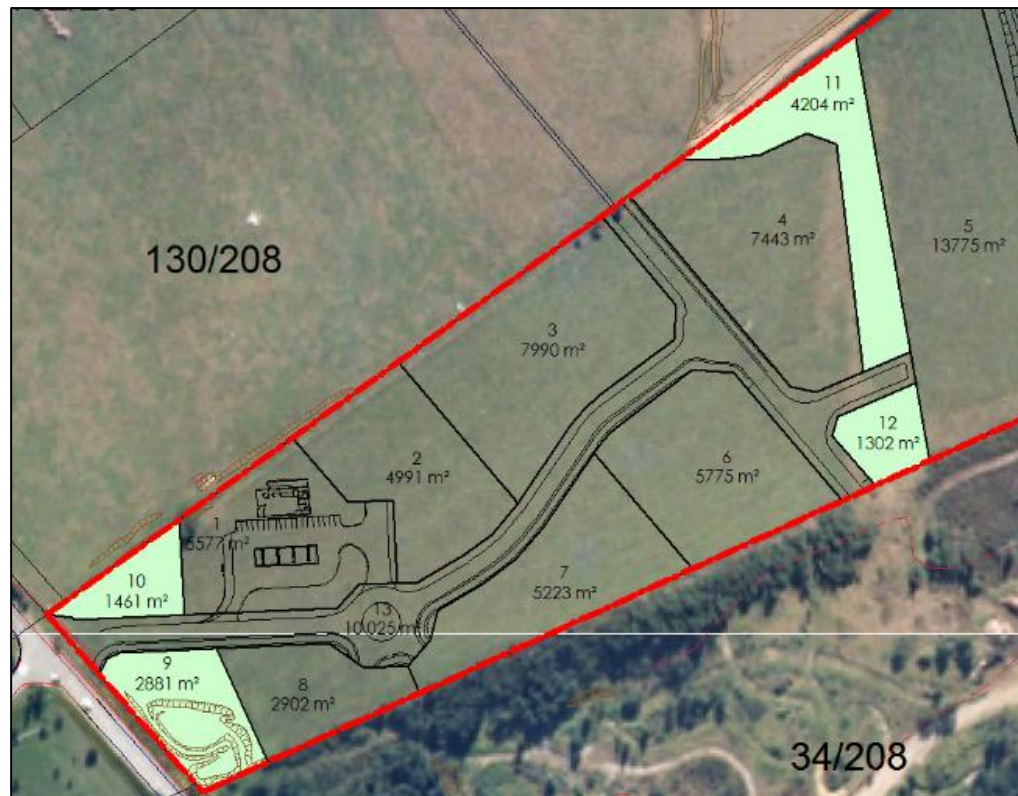


FIGURE 7: OPEN SPACE ZONE II ERVEN

The “Open Space Zone II” erven will accommodate the natural landscaped areas in the proposed development.

Transport Zone II

The table below is a summary of the prescribed development parameters for a “**Transport Zone II**” zoned property as set out in the George Integrated Zoning Scheme Bylaw (2017):

PROPOSED REZONING & SUBDIVISION: PORTION 4 OF THE FARM GWAYANG NO 208

George Integrated Zoning Scheme Bylaw (2017) (Transport Zone II)		Proposed Development	Compliance
Primary Use	Public street	Public street	Comply
The following development parameters apply			
A site development plan must be submitted to the Municipality for its approval. The site development plan as approved constitutes the development parameters for such public street.		See proposed SDP	Comply

The primary land use right for "Transport Zone II" zoned properties is "Public Street", which is defined as:

"public street" means any land, owned by or vesting in the Municipality, indicated on an approved plan, diagram or map as having been set aside as a public thorough way for vehicles and pedestrians, and includes —

- open public parking areas;
- sidewalks;
- those parts of a public place that are travelled parts;
- informal trading; and
- appropriate and necessary street furniture and infrastructure, including reticulation networks, which does not present any threat to the safety or obstruct or inhibit free movement of pedestrians

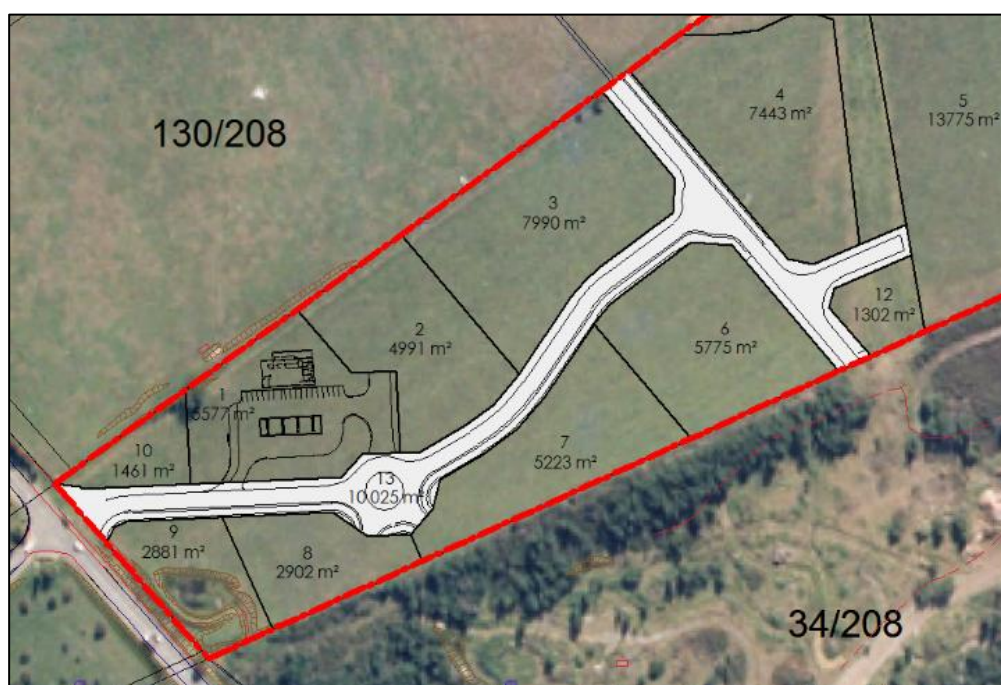


FIGURE 8: TRANSPORT ZONE II ERVEN

Agriculture Zone I

The table below is a summary of the prescribed development parameters for an “**Agriculture Zone I**” zoned property as set out in the George Integrated Zoning Scheme Bylaw (2017):

George Integrated Zoning Scheme Bylaw (2017)(Agriculture Zone I)		Proposed Development	Compliance
Primary Use	Agriculture	Agriculture	Comply

The remainder will remain zoned for “Agriculture Zone I”. The “Agriculture Zone I” erf (the Remainder) will allow for the proposed Bypass.



FIGURE 9: AGRICULTURE ZONE I (THE REMAINDER)

6. ACCESS

(**Plan 3: Proposed Traffic Circle**)

Access to the property is obtained via Main Road 404. The current and proposed access to the property is opposite the existing entrance to the George Airport. The development also entails a proposed traffic circle.



FIGURE 10: EXISTING ACCESS

The proposal is to construct a traffic circle opposite the existing access of the George Airport. A single lane roundabout will provide access to the proposed development. The primary reasons for the proposed roundabout are:

- Improved road safety;
- Improved convenience;
- Improved level of service of the intersection.

Turning movements at the intersection are high on all approaches. The high turning movements result in high conflict potential at the intersection. The figure below illustrates the proposed traffic circle and the existing George Airport Access.

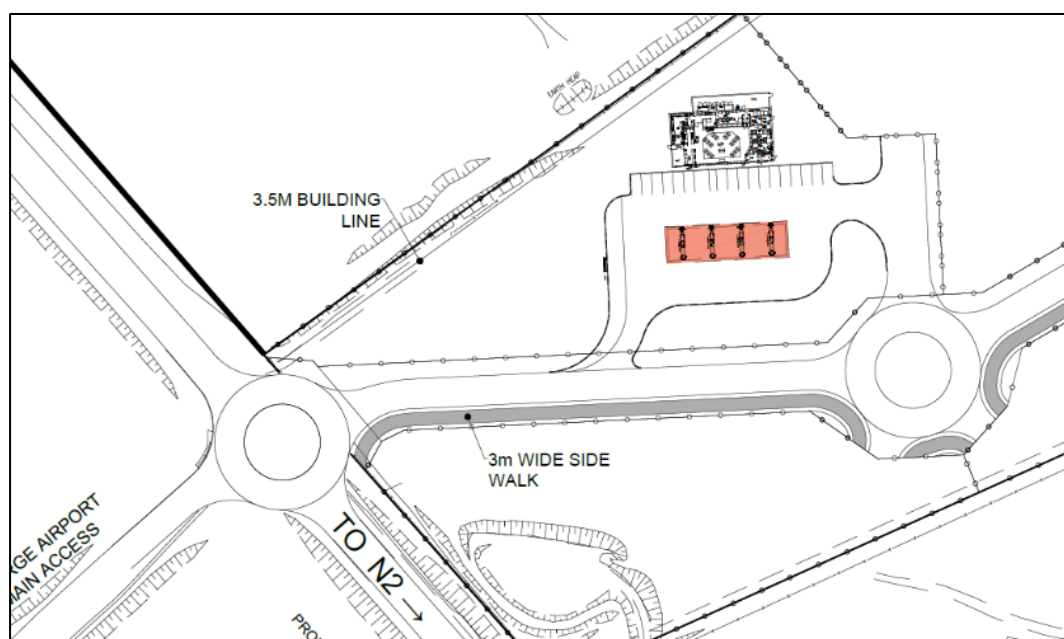


FIGURE 11: PROPOSED TRAFFIC CIRCLE AT THE EXISTING ENTRANCE TO THE GEORGE AIRPORT



FIGURE 12: EXISTING GEORGE AIRPORT ACCESS

7. TRAFFIC ASSESSMENT

(ANNEXURE F: Traffic Impact Assessment)

A Traffic Impact Assessment (TIA) was conducted by **Roodt Transport Safety (Pty) Ltd** for the proposed development on Portion 4 of Farm Gwayang No 208.

The following conclusion and recommendations were made as per the Traffic Impact Assessment (March 2018):

- (i) The proposed development is located to the east of the R404 at the George Airport main access road/R404 intersection. The township will include for a Service station and Warehousing.
- (ii) The proposed development will comprise of eight erven. One erf will be zoned "Business Zone VI" for a Service station, while the other seven erven will be zoned to "Industrial Zone I" for the purpose of warehousing. The required land-use rights comply with the Gwayang Local Spatial Development Framework.
- (iii) The properties to the immediate north and south of the proposed development will also receive access via the new township. The future land-use rights for these properties include for Airport Support Zone as stated in the Gwayang Local Spatial Development Framework.
- (iv) There is currently no formal access to the property. Access to the property is proposed via a new single lane roundabout at the R404/ George Airport main access road intersection.
- (v) Warehousing and Distribution land-use rights were used to calculate trip generation for the proposed development and neighbouring properties. A service station is not a primary trip generator since the majority of the total trips generated are passer-by trips that are intercepted from the adjacent road network.
- (vi) The results of the capacity and operational analyses show that the proposed intersection can easily accommodate the expected additional vehicle trips, not only

in terms of the design horizon year (2022), but also when the Airport Support Zone is fully developed for warehousing in the planning horizon year 2035. The upgrading of this intersection to a roundabout will ensure LOS A during the PM Peak Hour in the horizon year.

- (vii) The planning horizon may include the construction of the George Western Bypass (TR89) that will take through traffic from the R404. The traffic roundabout will then function at an even better level of service.

7.1. Assessment of Competing Filling Stations

The Traffic Impact Assessment (TIA) also included a detailed assessment of the merits of the two competing service station applications. There are two competing proposals for service stations in the immediate vicinity of the proposed service station. These facilities are located on Portion 131 and Portion 84 of the Farm Gwayang. The first mentioned site is located on the south-eastern quadrant of the intersection of provincial roads R102 and R404. The other site is located on the north-western quadrant of the R404 and the Airport access road intersection.

The purpose of this assessment is to evaluate the technical feasibility of the competing facilities as well as to compare the economic feasibility of alternative locations.

The assessment therefore considers the potential of the three sites to serve the needs of road users and the local community including the Airport, other commercial land uses such as the quarry and various nurseries, residential areas such as Herold's Bay and Glentana as well as the farming community between George and Groot Brak. The following table summarises the conclusions:

CONSIDERATION	LOCATION	NOTES	SCORE
Accessibility	Portion 131	Access indirect via development on Portion 4. Detour of 300m to gain access	Poor
	Portion 84	Access from main Airport access road does not meet sound road planning guidelines. It will be unsafe and will impact on mobility. Access from the road to unscheduled flights may be technically feasible if properly integrated into the road master-plan for the Airport.	Poor
	Portion 4	Access convenient for all road users. Access via traffic circle at location of proposed service station.	Good

CONSIDERATION	LOCATION	NOTES	SCORE
Road safety	Portion 131	Access via Portion 4 meets all road safety requirements.	Good
	Portion 84	Access does not meet requirements of TRH 26: South African Classification and Access Management Manual or Road Access Guidelines of the Provincial Administration Western Cape. Impacts negatively on road safety and mobility. Access via road to unscheduled flights may meet requirements of TRH 26 if properly integrated into the road master-plan of the Airport Zone.	Unacceptable
	Portion 4	Access meets provincial, national and international design guidelines.	Good
Long term development considerations	Portion 131	No impact on long term development of Airport and Airport Support Zone.	Good
	Portion 84	Negative impact on future development of Airport road access system. Negative impact on future public transport facilities.	Unacceptable
	Portion 4	No impact on future development of Airport or Airport Support Zone.	Good
Ability to serve	Portion 131	The facility will not be able to serve the market due to indirect access.	Poor
	Portion 84	Ability to serve heavy vehicles poor due to constrained access via mini-circle. Ability to serve vehicles exiting Airport is good through left-in-left-out movement. Ability to serve all other road users is poor due to substandard access along congested road link. Ability to serve all Airport related patrons via access from road leading to unscheduled flights is good	Unacceptable
	Portion 4	Facility will serve the market well due to properly designed access system in accordance with National and Provincial road design guidelines.	Good
	Portion 131	No impact.	Good

CONSIDERATION	LOCATION	NOTES	SCORE
Impact on long term development of Airport	Portion 84	Significant impact on development potential of the Airport due to limited spacing along main access to Airport. Impacts on mobility and road safety along main Airport access and circulation road.	Unacceptable
	Portion 4	No impact.	Good

The proposed location for the development of a service station on Portion 131 is not acceptable due to poor and inconvenient access.

The proposed ACSA facility on Portion 84 is flawed due to the non-compliance of the proposed access mini-circle with national and provincial road design guidelines. Access via the road to unscheduled flights is however acceptable and will serve some airport related land uses.

The proposed facility on Portion 4 will meet all the road access requirements and will optimally serve the local market, including the residential, farming and commercial land uses.

Conclusion:

From the operational analyses contained in the TIA and above conclusions made by the Professional Traffic Engineer it is evident that the proposed intersection can easily accommodate the expected additional vehicle trips. It is also the professional opinion that the proposed service station on Portion 4 of Farm Gwayang No 208 is the most desirable location as it will have adequate access and is able to accommodate the traffic volumes.

8. CIVIL SERVICES

(ANNEXURE G: Civil Service Report)

Fritz van Zyl (Pr.Eng [Civil] - ECSA 960570) was appointed to investigate and evaluated the provision for essential civil engineering services for the proposed service station / retail facility / industrial zone development on Portion 4 of Farm Gwayang No 208.

The investigation centred around the utilization / upgrading of the existing services along the R404 adjacent to the development site i.e. municipal water supply, municipal sewer line / pump station and solid waste disposal for the proposed preferred alternative.

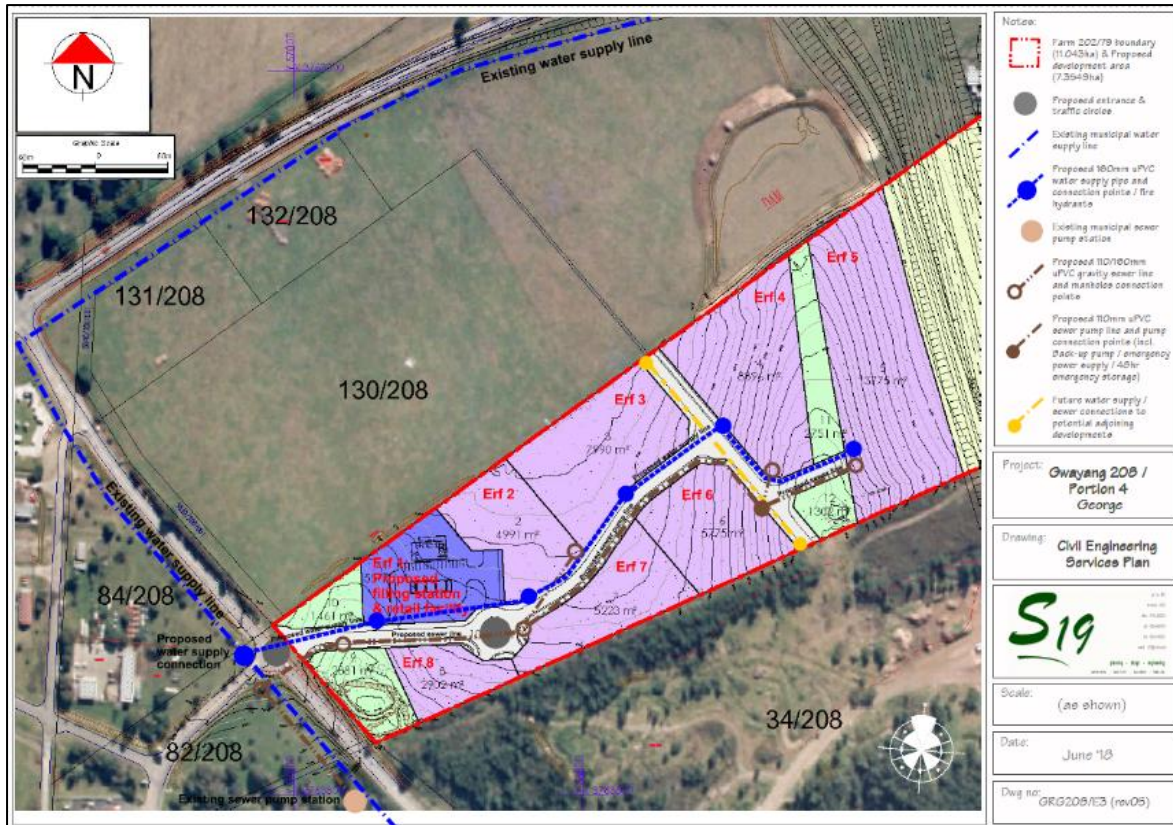


FIGURE 13: EXTRACT OF THE ENGINEERING SERVICES LAYOUT

8.1. Water Supply

Potable water will be supplied (via a new 160mm uPVC pipe) from the existing reticulation system feeding from the existing municipal water supply line along the R404 near the entrance to the George airport. Way leave approval from the relevant Provincial departments will be required in order to traverse (i.e. horizontal directional drilling) under the existing R404 provincial road.

The following estimations of the basic potable water requirements (i.e. average demand) for Phase 1 i.e. business zone (kitchen / toilets / wash up / car wash) and Phase 2 i.e. industrial zone (warehouse toilets & wash up areas) were calculated:

- Phase 1: Business Erf x 1 (i.e. Service station / Retail facility): AADD = **20kl/day** @ **1.5 l/s** peak flow and storage requirement [2 x Average daily demand + Fire Storage (High Risk – 6 hours @ 1500l/min)] = **760m³**
- Phase 2: Industrial Plots x 7 (i.e. Warehousing / Airport services): AADD = **160 kl/day** @ **1.5 l/s** peak flow and storage requirement [2x Average daily demand + Fire Storage (Moderate Risk – 4 hours @ 1500l/min)] = **600m³**

All water supply pipes will be installed within the proposed access road reserve and all shallow pipe depths at water course crossings (i.e.<1m) will necessitate additional hard layer protection in the road design in order to protect pipes against storm water and heavy vehicle damage.

Initial discussions with George Municipality indicated that the existing network should have the capacity to accommodate the proposed development of the proposed service station / retail facility and no upgrade of the existing main water supply line will be required.

In order to minimize the impact on the municipal supply it is proposed that mandatory rainwater storage be implemented and furthermore to ensure sufficient capacity in the storage tanks (i.e. 10kl / site minimum) to accommodate all the onsite flushing toilet and garden irrigation requirements. Water saving measures including aerated taps and dual flush toilets will also be implemented.

Potential future developments to the north and south of Portion 4 of the farm Gwayang 208 will be able to feed from the proposed water supply network assuming that similar type developments / quantities are envisaged. Further discussion with adjacent landowners will be required to formalise an agreement regarding future water supply connections and cost.

8.2. Sewage

Preliminary calculations indicate that the proposed preferred development for Phase 1 i.e. business zone (kitchen / toilets / wash up areas) and Phase 2: i.e. Industrial zone (warehouse toilets & wash up areas) will generate the following average daily wastewater quantities:

- Phase 1: Business Erf x 1 (i.e. Service station / Retail facility): **15 kl/day @ 0.15 l/s** peak flow
- Phase 2: Industrial Plots x 7 (i.e. Warehousing / Airport services): **120 kl/day @ 1.2 l/s** peak flow

The wastewater generated for Phase 1 will be conveyed via a gravity sewer collector system (110mm uPVC @ min 1:60 gradient) into a 160mm uPVC gravity line (@min 1:60 gradient) which in turn will traverse the R404 Provincial Road towards the existing municipal sewer pump station located near the entrance of the George airport. Initial discussions with George Municipality indicated that the existing municipal network should have the capacity to accommodate the proposed development and no upgrade of the existing pump station or sewer line will be required.

Phase 2 of the proposed development (i.e. Industrial zone) will include a 63/110mm uPVC pump line that will spoil into the gravity sewer collector system. The pump station will include a back-up pump / power supply and telemetric system that will automatically activate and sound an alarm in case of a pump and/or power failure. The operational plan for the pump station will incorporate a 24hr response team that will monitor and attend to all maintenance issues. All emergency or accidental spills from the pump station will be discharged into an underground conservancy tank with a 48-hour storage capacity.

All sewer pipes will be installed within the proposed access road reserve and all shallow pipe depths (i.e. <1m) at water course crossings will necessitate additional hard layer protection in the road design to protect pipes against storm water and heavy vehicle damage. Way leave approval from the relevant Provincial departments will be required in order to install

(i.e. horizontal directional drilling) the proposed sewer under the existing R404 provincial road. The total length of the new proposed sewer network will be approximately 700m.

As with the water supply network it is also envisaged that potential future developments to the north and south will be able to feed into the proposed sewer system (assuming similar type developments / quantities). Further discussion with adjacent landowners will be required to formalise an agreement regarding future sewer connections and maintenance.

8.3. Solid waste management

The removal of all solid general waste by Municipal contractors will take place from the mandatory enclosed waste service yards at each of the service station / light industrial erven and will be accessible from the access road. Solid waste quantities for commercial / light industrial purposes are based on an estimated solid general waste generation of 0.1kg/m²/day and it is expected that Phase 1 (i.e. service station) will generate approximately 100 kg/day and Phase 2 (i.e. light industries) in the order of 3500 kg/day. The removal of domestic / general waste and management thereof will be handled by the George Municipality as per the Services Agreement between with the developer / owner of property.

Waste reduction, re-use & recycling in terms of Eden Municipality Integrated Waste Master Plan will be strongly encourage and mandatory separate recycle bins for the various type of recyclable materials will be provided in waste collection yards on all the commercial / industrial properties. These bins will be emptied by approved recycling service providers.

All hazardous and industrial waste will be disposed of by registered service providers in terms of the regulations of the Waste Act (Act No. 59 of 2008) and the Hazardous Substances Act (Act 5 of 1973). No burning, on-site burying or dumping of any type of waste will be allowed.

All solid waste generated during the construction process will be separated and placed in appropriate containers in the bulk waste collection area in the Contractors camp and will be cleared weekly by a recognised service provider. Litter collection bins will be provided within the Contractors camp and at temporary locations on the construction site and will be regularly cleared. All unutilised construction materials will be removed once construction has ended. All removed topsoil should be stockpiled on-site and as far as possible be reused for rehabilitation and landscaping purposes in and around the development.

9. ELECTRICAL SERVICES

(ANNEXURE H: Electrical Services Report)

Clinkscapes Maughan-Brown (CMB) were appointed to compile an Electrical Services Report for the proposed service station and airport support development on Portion 4 of the Farm Gwayang No 208.

The Electrical Services Report is also based on a two (2) phase development; namely Phase 1 for the service station and Phase 2 for the industrial zoned erven.

9.1. Master Plan and Phases

For long term planning purposes an electrical master plan has been compiled that includes all phases, i.e. Phase 1 and 2 of the Development.

For economic reasons it has been considered necessary that the main supply to the Development also be undertaken in two (2) phases, i.e. a supply of lower capacity and simplified construction for Phase 1, which is temporary, and of higher capacity and that is permanent to serve Phase 1 and 2 in terms of the master plan.

9.2. Supply Authority

The Supply Authority will be George Municipality in which the boundaries of the Development fall.

9.3. Electrical Peak kVA Demand

The estimated Peak kVA Demand that will be imposed on the municipal network has been calculated as follows:

Phase 1

Item	Description	kVA
(i)	Filling station and convenience shop - $\pm 350\text{m}^2$ @ 200VA/m ²	70
(ii)	Petrol pumps	20
(iii)	Area lighting	8
(iv)	Sundry loads	5
TOTAL		103

Applying an overall network diversity factor of 0,9, reduces the peak demand to $0,9 \times 103 = 93\text{kVA}$.

For the purpose of determining whether the Municipality has sufficient spare capacity in their network to supply this phase of the Development, allowance needs to be made for a possible high of 120kVA and low of 80kVA.

Phase 1 and 2 (master plan)

Item	Description	kVA
(i)	Phase 1 – Filling station and convenience shop	103
(ii)	Phase 2:	
	• Erf 2 - 175 Amps 3 phase	69
	• Erf 3 - 300 Amps 3 phase	120
	• Erf 4 - 400 Amps 3 phase	138
	• Erf 5 - 400 Amps 3 phase	207
	• Erf 6 - 200 Amps 3 phase	138
	• Erf 7 - 200 Amps 3 phase	276
	• Erf 8 - 100 Amps 3 phase	276
	• Sundry load (street lighting, etc)	10
	TOTAL	1 337

Applying an overall network diversity of 0,7 reduces the peak demand to $0,7 \times 1\,337 = 936\text{kVA}$.

This could result in a possible high of 1 000kVA and a low of 800kVA.

The Electrical Services Report also make reference to a letter, dated 17 March 2017, from the Municipality confirming that their MV network has sufficient spare capacity to supply Phase 1.

Also contained in the Electrical Services Report is a letter from Clinkscales Maughan-Brown (CMB), dated 9 November 2017, to the Municipality to confirm that their MV network also has sufficient spare capacity to supply the combined load of Phase 1 and 2.

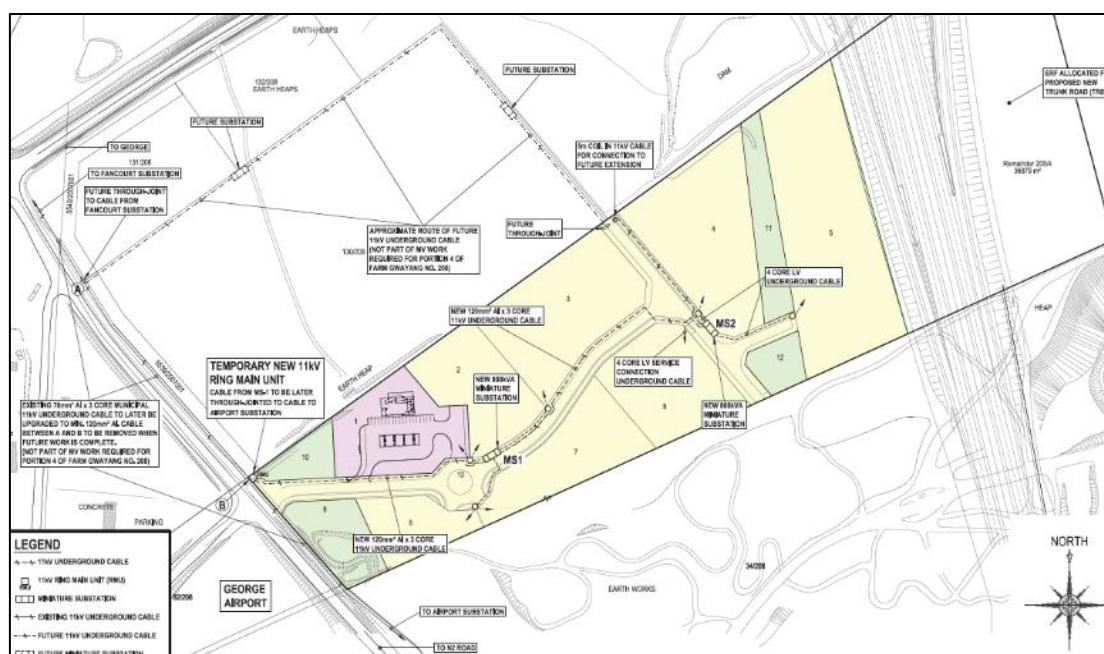


FIGURE 14: EXTRACT OF THE MASTER PLAN: PROPOSED MV & LV RETICULATION NETWORKS

Conclusion:

As per the Electrical Services Report it is clear that the existing MV network has sufficient spare capacity to supply the proposed development.

10. STORM WATER MANAGEMENT

(ANNEXURE I: Storm Water Management Plan)

Infrastructure Consulting Engineers (ICE) were appointed to do provisional planning of roads and services for the proposed township, which includes the necessary infrastructure to collect and control storm water runoff. The Storm water Management Plan was compiled to guide the future development of erven and the drainage system inside proposed road reserves. The purpose of the plan is to mitigate the impact of the post-development stormwater drainage system on the current drainage system downstream of the development.

The report also addresses mitigating measures related to the potential impact of the storage of hazardous substances in underground fuel tanks on proposed Erf 1. Erf 1 is earmarked for the development of a fuel service station.

10.1. Natural Water Courses

There are two distinct natural water courses present on Portion 4. These are the valley downstream of the farm dam on Portion 139 and the valley draining into the dam on the south western corner of Portion 4.

The two natural drainage structures mentioned above extend into Portion 34 of the Farm Gwayang no 208. Portion 34 is located directly to the south of Portion 4. The dam in the south western corner of Portion 4 drains into a tributary of the Gwayang River. The route of the drainage between the dam and the tributary traverses a natural scenic linkage as proposed by the Gwayang Local Spatial Development Framework.

The eastern water course also crosses onto Portion 34 and enters an area defined as Airport Support Zone in terms of the Spatial Development Framework. This water course also drains into the mentioned tributary of the Gwayang River.

10.2. Proposed Storm Water Drainage System

The proposed storm water drainage system associated with the development of Portion 4 must integrate into the surrounding area. It must cope with the runoff from the higher laying areas and mitigate all possible negative impacts on the receiving downstream areas. In order to counter the expected increase in peak runoff resulting from the urbanisation, storm water attenuation structures are proposed to be developed on each property to be developed on Portion 4. This will limit flow velocities to pre-development rates and consequently protect the receiving system from scouring and erosion.

Attenuation structures are proposed to adjust the post-development runoff hydrograph to show a peak runoff rate equal to or less than the pre-development hydrograph.

The proposed Industrial Zone 1 for warehousing and light industrial purposes, will result in a large portion of the individual stands being covered with building roofs or parking and circulation space. The runoff from these areas will therefore not carry any loads of eroded materials. There is also no indication that the biological and chemical quality of runoff will be contaminated through the proposed land uses.

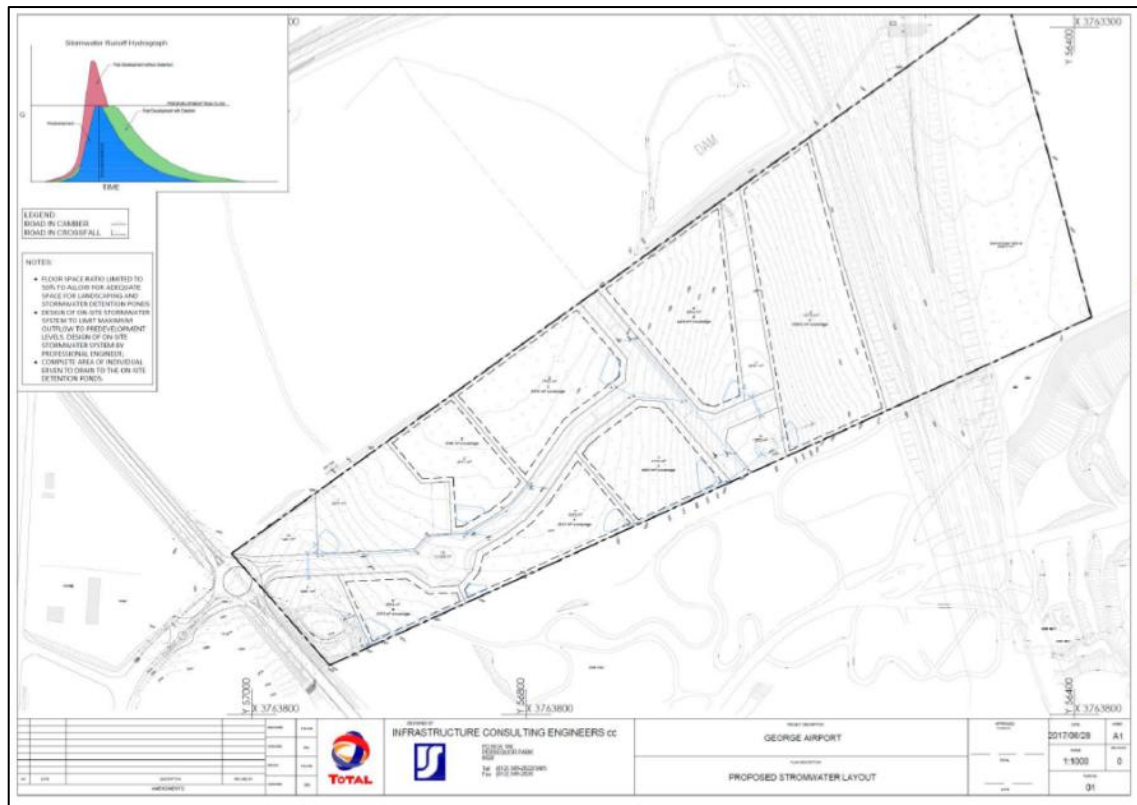
The outlets of on-site detention ponds must be connected to the underground storm water drainage system inside the road reserves. The pipe system inside the road reserve therefore carries pre-development runoff volumes discharged from the attenuation structures. The pipe systems discharge into the existing dams on proposed erven 10 and 12.

10.3. Underground Storage of Hazardous Substances

The proposed zoning of Erf 1 is "Business Zone VI" to allow for a service station. Associated with this land use is the storage of fuel in underground tanks as well as the distribution of fuel from the delivery vehicle into the tanks and the distribution system from the tanks to the fuel dispensers in the forecourt area. This infrastructure carries a risk of contamination of the ground and groundwater. The risk of contamination with these hazardous substances must be mitigated.

The Storm water Management Plan sets out clear mitigation measurements as to prevent and minimise these associated risks.

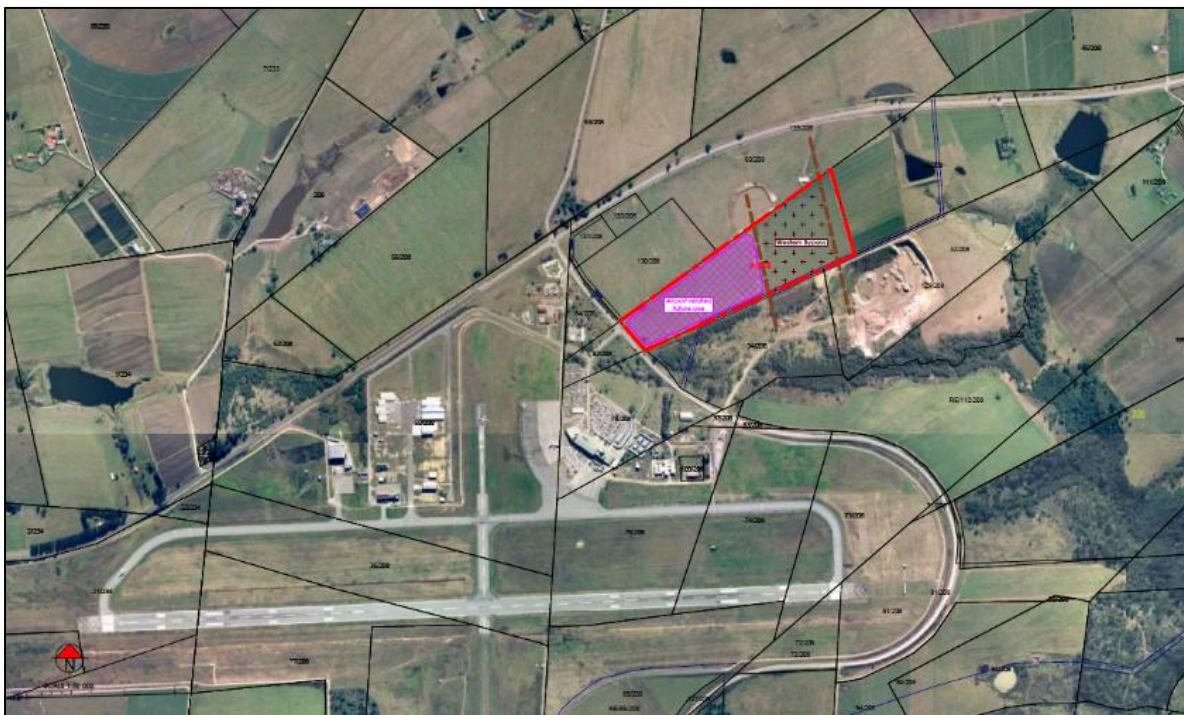
The specification proposed by ICE limits the risk of fuel leaking from the storage tanks and from the fuel pipe system to an absolute minimum. It is evident that the risk associated with fuel leaking into the soil is mitigated adequately resulting from the proposed installation specifications in The Storm water Management Plan. Leaks will be detected timeously in order to prevent leakage into the underground. Both leaks in the tanks or the pipe system will timeously be observed through the alarm system or the termination of the delivery of fuel to the dispensers.



SECTION C :**CONTEXTUAL INFORMANTS****11. LOCALITY***(Plan 1: Locality Plan)*

The application area is located opposite the entrance to the George Airport. The application area is located on the eastern side of Main Road 347, between the Old National Road to George and the N2 National Road. The application area is approximately 350m south of the Old National Road and opposite the current entrance to the George Airport. The GPS co-ordinates for the centre of the proposed development are 22° 23' 0.75" E and 33° 59' 56.45" S.

The proposed and authorised new Western Bypass road is aligned along the eastern boundary of the application area.

**FIGURE 16: LOCALITY****12. CURRENT LAND USE AND ZONING****12.1. Land Use**

The property is currently vacant, with no improvements. The property is currently used as grazing for cattle. An existing dam is located in the south-west corner of the property.



FIGURE 17: EXISTING LAND USE



FIGURE 18: EXISTING DAM IN THE SOUTH-WESTERN CORNER

12.2. Zoning

The application area is currently zoned as "Agriculture Zone I" in terms of the George Integrated Zoning Scheme Bylaw (2017).

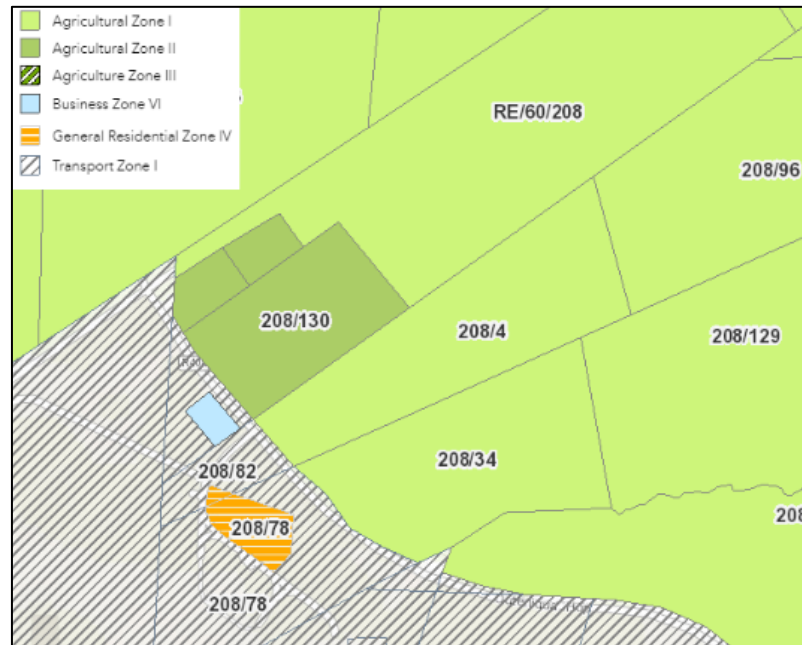


FIGURE 19: GEORGE INTEGRATED ZONING SCHEME BYLAW (2017)

13. SITE CHARACTERISTICS

(Refer Plan 2: Site Characteristics)

13.1. Topography

Most parts of the property is characterised by a flat topography.

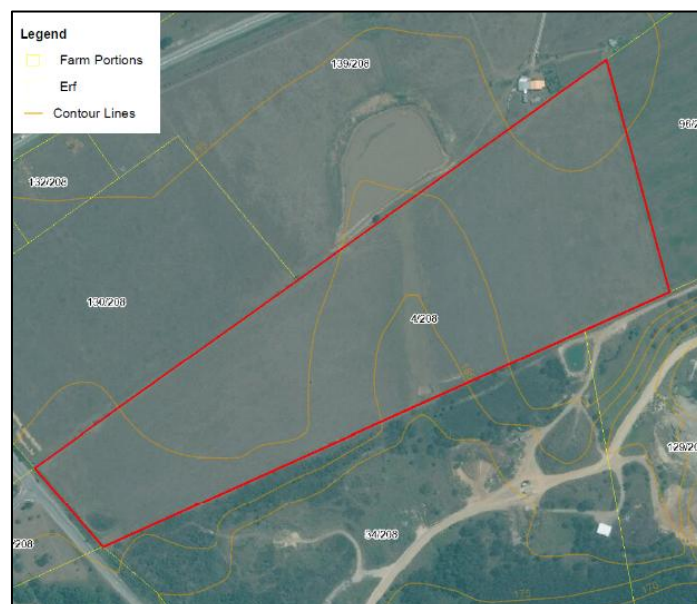


FIGURE 20: 5M CONTOUR PLAN

The 5m Contour Plan and Slope (Degree) Plan indicate that the topography is very flat and slope of 0-5 degree covers the proposed development area. The flat topography of the land is ideally suited for a services station and warehouse purposes.

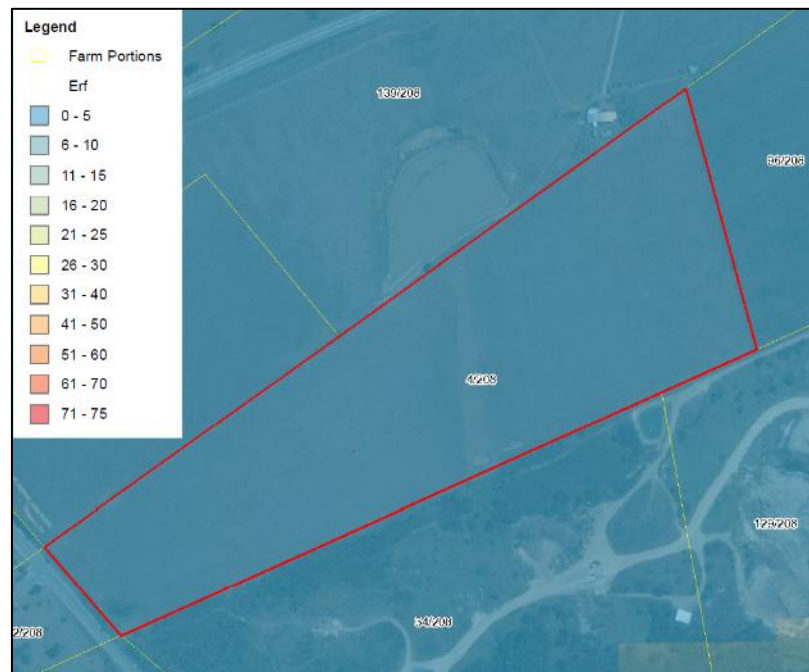


FIGURE 21: SLOPE (DEGREE)

13.2. Drainage

(ANNEXURE J: Freshwater Impact Study)

Blue Science (Aquatic Scientists) were appointed to conduct a Freshwater Impact Assessment for the development. This freshwater assessment report is intended to inform the environmental and water use authorisation processes for the proposed project. The following conclusion and recommendations were made in the Freshwater Assessment:

The study area is located in the K30B quaternary catchment, within the catchment of the Gwayang River. The tributary of the Gwayang River at the site flows through the George Airport before flowing south of the site and into the Gwayang River. The stream is joined by two smaller tributaries that cross the site. A small valley-bottom wetland is associated with the larger watercourse.

The watercourses in the area are mapped Ecological Support Areas and the lower sections of the larger tributary of the Gwayang River (that is south of the site) is mapped as aquatic CBAs where the two-stream confluence and the valley bottom wetland areas occur. The wider river corridor is mapped as riparian forest CBAs. The valley bottom wetland area associated with the Gwayang River is also mapped as a FEPA wetland. No FEPA wetland features are mapped within the site.

Both the watercourses and the valley bottom wetland area within the site are considered to be in a seriously modified ecological condition with extensive loss of ecological functionality

as a result of cultivation of the area as well as the instream dams. The larger tributary of the Gwayang River to the south of the site is in a better ecological condition and is moderately to largely modified as a result of the construction of the airport and the associated activities and the invasion of the riparian zone with alien invasive plants.

The smaller watercourses within the site are considered to be of a low ecological importance and sensitivity while the larger tributary and valley bottom wetland are of a moderate ecological importance and sensitivity due to the habitat that provides as well as the link that it helps to provide between the coast area and the hillslope.

Due to the fact that the watercourses within the site are highly modified and of a relatively low ecological importance and sensitivity, they do not pose a significant constraint to the proposed development of the site. They do however act as conduits for the movement of water through the landscape with the larger watercourse to the east occurring within a relatively wide and deep valley. This functionality of the watercourses is recognised within the biodiversity conservation mapping of the area where the watercourses are mapped as ecological support areas. These corridors and the associated functionality should thus preferably be maintained within the development proposal as far as possible.

A corridor of approximately 20m for the larger watercourse and 10m for the smaller watercourse is recommended to accommodate storm water flow within the site. These areas would need to be sized to accommodate the potential flow through the site. The watercourses and their instream dams near the southern boundary of the site can be incorporated into the stormwater management system for the site. The watercourses could possibly be shaped as open swales that are planted with wetland vegetation such as *Juncus effusus*, *Carex gloerabilis*, *C. clavata*, *Isolepis prolifera*, *Pycnus polystachyos*, and *Zantedeschia aethiopica* within the wetter bed together with buffalo grass *Stenotaphrum secundatum* along the banks. The incorporation should as far as possible lead to the longer-term improvement of the aquatic habitat within the watercourses on site and more importantly adequately mitigate any potential downstream impacts on the valley bottom wetland and watercourse south of the site. The dams in particular should assist with mitigation of the increased intensity of the runoff from the site that the final flow from the site is allowed to overflow from the ponds into the downstream watercourse and wetland area in a dispersed manner.

The introduction of exotic and alien invasive plants (in particular kikuyu grass *Pennisetum clandestinum*) for landscaped areas should be avoided. It is recommended that alien vegetation control measures take place throughout the undeveloped open areas of the site such as within the corridors and stormwater management areas. Control of nuisance growth of bulrush *Typha capensis* is likely to also be required on an ongoing basis to encourage growth of indigenous vegetation.

Also of significance are the more ecologically important tributary of the Gwayang River and the valley bottom wetland area that are downstream of the site. Any potential impacts of the proposed development should be mitigated on site to prevent any further degradation of these aquatic ecosystems it is recommended that the two existing dams within the site located on the downstream edge of the two watercourses before they leave the property

should be utilised to mitigate any storm water impacts from the developed site. The incorporation should as far as possible lead to the longer-term improvement of the aquatic habitat within the watercourses on site and more importantly adequately mitigate any potential downstream impacts on the valley bottom wetland and watercourse south of the site.

In terms of the proposed layout, the risk of altering the ecological status of the aquatic features within the site as a result of the proposed development of the site is considered to be low for the construction phase and operational phase. The need for sewerage pipelines to cross the two watercourses within the site, as well as the proposed pump station near the larger watercourse and wetland area will however imply that the proposed works will be excluded from the General Authorisations and that a water use licence will need to be applied for, for Section 21(c) and (i) water uses.



FIGURE 22: SETBACK AREAS (YELLOW AREAS) INDICATED

13.3. Geo-Hydrological Conditions

(**ANNEXURE K: Geo-Hydrological Assessment**)

Parsons & Associates Specialist Groundwater Consultants was appointed to undertake a Geo-hydrological assessment of the site and the potential impacts of the proposed new Service Station on the geo-hydrological conditions of the area.

The Groundwater Assessment concluded that:

- (i) Portion 4 of Farm 208 Gwayang is located on a weathered and fractured granitic aquifer that yields poor groundwater quality and is not used within 1 km of the facility.
- (ii) The aquifer has little potential to be developed. The risk of groundwater contamination occurring as a result of the proposed development is considered very low; with the consequences thereto insignificant.
- (iii) If the facility is designed, constructed and managed according to the norms of the industry, **no further mitigatory actions are required.**
- (iv) The site is considered suitable for development as service station.

13.4. Geotechnical Conditions

(ANNEXURE L: Geotechnical Report)

Outeniqua Geotechnical Services were appointed to conduct a Geotechnical Investigation of the site to establish the suitability of the application area for the proposed development. According to the Geotechnical Study, the proposed development includes a service station and light industrial units for support services for the nearby George Airport. New structures are likely to include single or double storey steel portal frame and masonry buildings and underground fuel storage tanks (UST's). Internal access roads, parking areas green open spaces are included in the proposed Site Development Plan. The geotechnical nature of the site needs to be investigated for planning purposes, as well as to facilitate the engineering design of structures and civil services.

The comprehensive Geotechnical Report concluded that:

- (i) The site is generally suitable for the proposed development in terms of the geology and soil conditions, but there are some important constraints, such as natural drainage lines and potentially compressible/collapsible soils.
- (ii) The geotechnical conditions are unlikely to be severely problematic, and conventional shallow reinforced foundations are anticipated.
- (iii) Some precautionary measures are recommended for the design of earthworks and foundations in order to cater for the expected soil conditions and potential soil movements. The recommendations are generally considered standard practice and should not significantly affect project feasibility.

13.5. Vegetation

The landcover on the area of the proposed development is Improved Grassland, the property is currently used for grazing purposes. The Crop Census (2013) illustrate that property consist of planted pastures (Lucerne).

PROPOSED REZONING & SUBDIVISION: PORTION 4 OF THE FARM GWAYANG NO 208

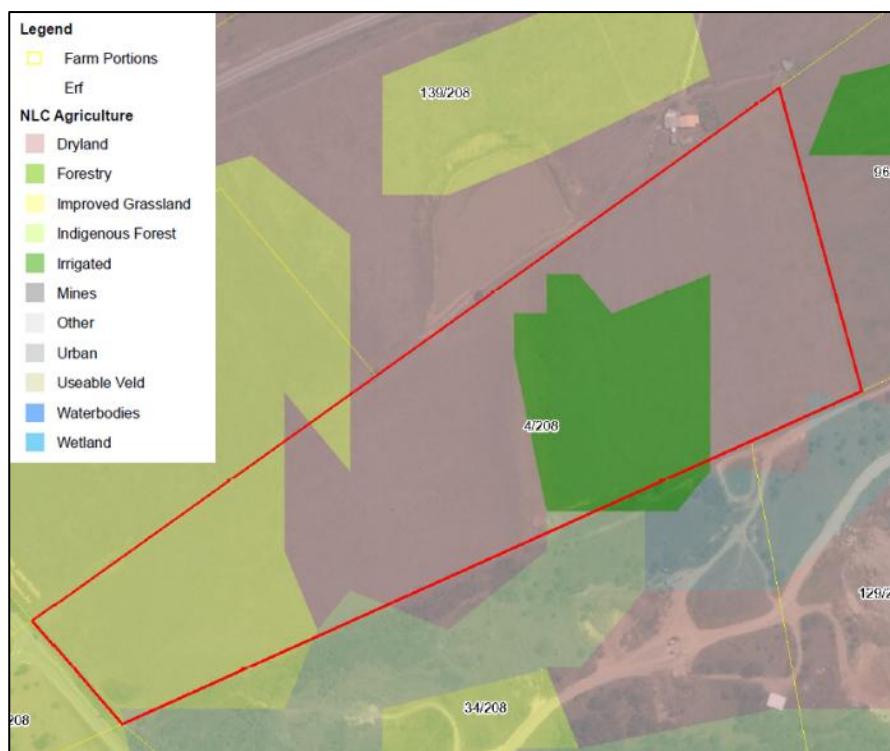


FIGURE 23: LAND COVER (NLC 2000)

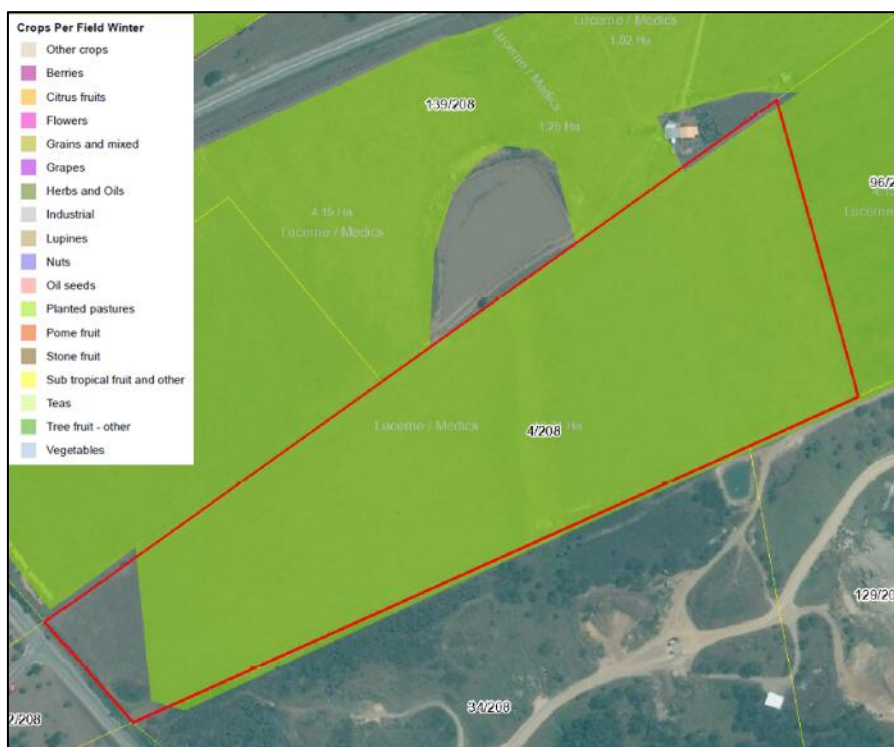


FIGURE 24: CROP CENSUS (2013)



FIGURE 25: VEGETATION ON PROPERTY

The figure above clearly indicates the type of vegetation on the property (improved grasslands). There are no sensitive, conservation worthy vegetation on the application area.

13.6. Agricultural Potential

According to <https://gis.elsenburg.com/apps/cfm/> the application area has a low to moderate potential for grazing. The proposed development will therefore not result in the loss of high potential agricultural land.

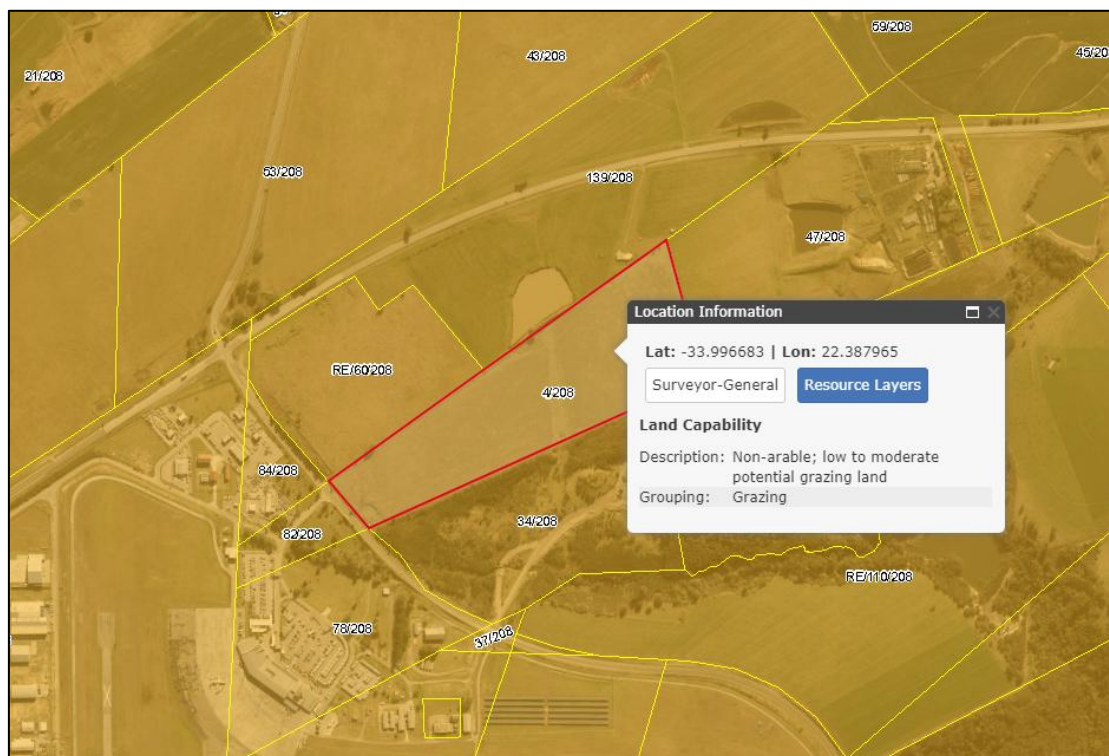


FIGURE 26: LAND CAPABILITY OF THE APPLICATION AREA

13.7. Biodiversity Status

The figure below indicates that the application area is not within any CBA Areas.



FIGURE 27: CBA AREAS

13.8. Access

Access to the property is obtained via the R404 road. The access to the property is opposite the existing entrance to the George Airport. It is proposed to construct a new traffic roundabout, to improve the access and circulation of traffic in and around the George Airport.



FIGURE 28: EXISTING ACCESS TO THE APPLICATION AREA

The proposal is to construct a traffic circle opposite the two existing accesses of the object property and the George Airport. The figure below illustrates the proposed traffic circle and the existing George Airport Access.

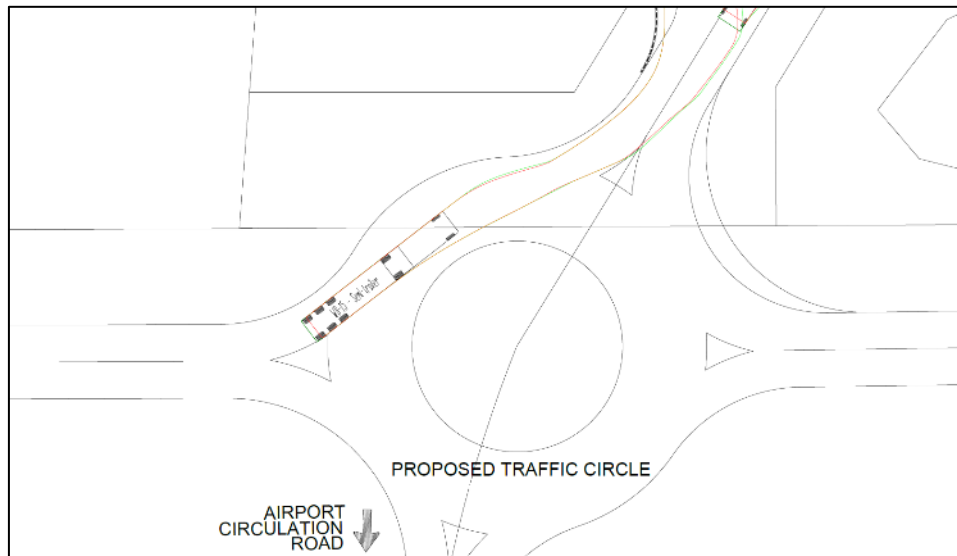


FIGURE 29: PROPOSED TRAFFIC CIRCLE



FIGURE 30: EXISTING GEORGE AIRPORT ACCESS

13.9. Built Environment

There is no structure or built environment on the property.

14. CHARACTER OF THE AREA

The area is characterised by various agricultural, tourism and airport related land uses.

14.1. Agricultural Character

Apart from the George Airport which is situated south of the application area, the immediate area surrounding the property is characterised by agricultural activities. The figure below

indicates the majority of land that being used for agricultural activities. One can clearly see the need to expand airport related uses in the area.



FIGURE 31: AGRICULTURAL ACTIVITIES

The Bargain Nursery is located on Portion 137 of the Farm 208, to the south of the Airport.



FIGURE 32: NURSERY ON PORTION 137 OF THE FARM 208

14.2. Airport Related and Other Approvals in the Area

The locality of the proposed development is ideal to use for the expansion of airport related uses. The property is adjacent to the airport and falls within the area that is earmarked for expansion of airport related facilities.

The proposed development will contribute to the character of the airport area, and it will also support the development of airport related uses adjacent to the George Airport.

George Municipality has approved two (2) land development applications for service stations in the past. The one service station is located on Portion 131 of the Farm No 208; and the other service station is located on the ACSA Airport site (Portions 82 & 84 of the Farm No 208). The locality of these service stations is located in Figure 33 below:



FIGURE 33: LOCALITY OF APPROVED SERVICE STATIONS

Neither of these approved rights have been implemented. Certain access complications have stalled the implementation of the approved service station on Portion 131.

During the pre-application consultation meeting that was held with George Municipality during 2016, the officials present mentioned that the planning approval for the service station on Portion 131 have lapsed. We do not have any documentation that proves whether the rights are still in place or not. During the same pre-application consultation meeting, the officials present informed the meeting that Portions 131 & 132 of Farm Gwayang 208 do not have a viable or suitable direct access to Portion 131 to allow for a service station.

Recent correspondence (November 2017) with George Municipality confirmed that the development rights on Portion 131 have been implemented; thus, the subdivision and zoning rights allocated cannot lapse. However, the property still does not have access and can't

implement these rights unless Department Roads Engineer (DRE) grants a new access point or the owner of Portion 4 grants access over their property.

The only way to access Portions 131 & 132 of Farm Gwayang 208 is through the application area (Portion 4 of the Farm Gwayang No 208), or via a servitude road further east of Portion 132. The layout plan for the proposed development does allow for an access to all neighbouring properties to prevent land-locked properties.

The approved service station on the current ACSA Airport site (Portions 82 & 84 of Farm Gwayang No 208) was approved by George Municipality during 2013. This approval was valid for a period of two (2) years. If the applicant applied for the extension of the validity period, the applicant was likely to obtain approval for the extension for 2 more years (i.e. lapsing date of June 2015). It is unknown whether a further extension was granted after 2015 or whether these rights have lapsed.

ACSA is under the impression that these rights are still valid. This approval for the service station on Portion 82 & 84 was subject certain conditions of approval (such as an updated Traffic Impact Assessment), and it is uncertain whether ACSA complied with all these conditions of approval. An extract of the 2013 letter of approval is shown in the figure below:

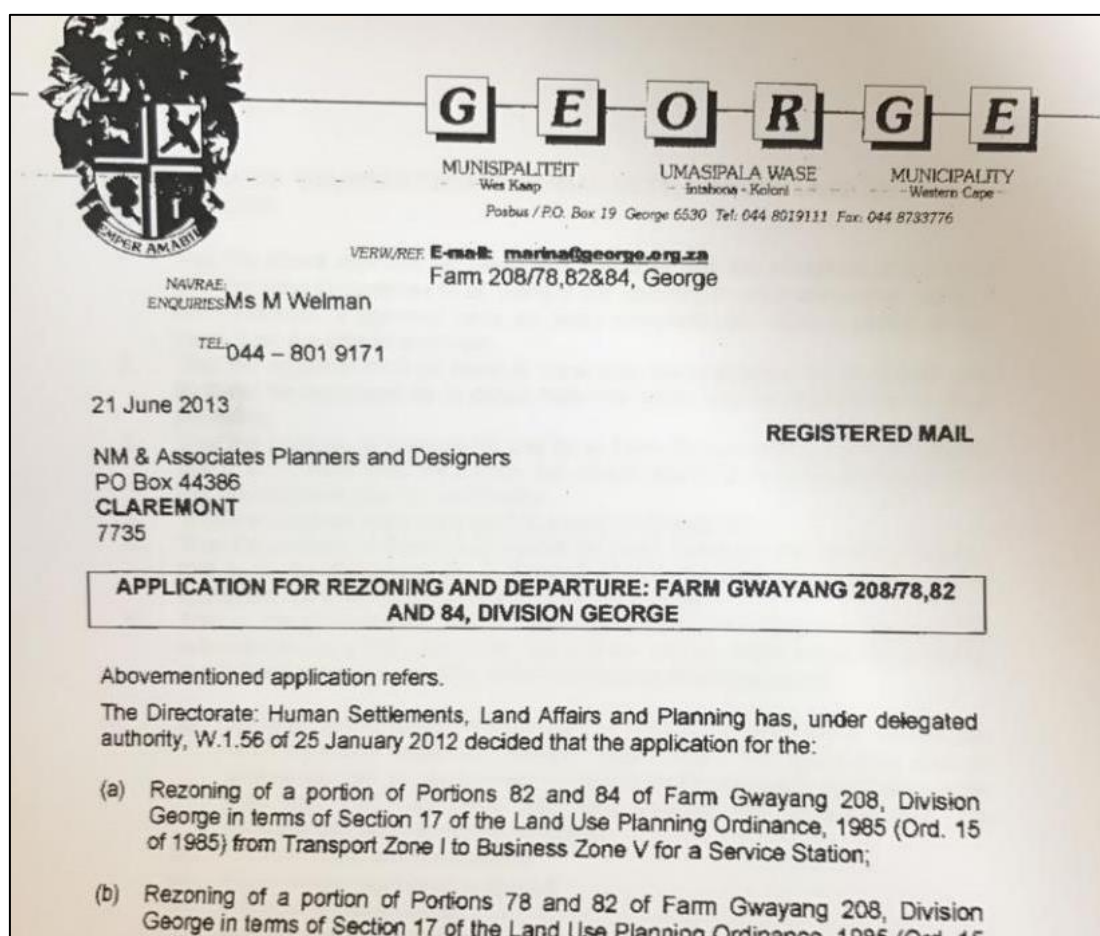


FIGURE 34: ACSA SERVICE STATION APPROVAL

The District Roads Engineer has confirmed on several occasions that no access will be granted to Portion 131 other than via Portion 4 of 208 Gwayang.

George Municipality also confirmed that the owner of Portion 84 did apply for extension of the rights for the service station. The approval lapses on 20 June 2018.

It can be concluded that:

- (i) Even though the application area is located outside the demarcated urban edge, the development falls within the area that is earmarked for airport related land uses;
- (ii) Application is consistent with the character of the area as it contains airport related facilities;
- (iii) The proposed development can be regarded as “infill” development that is consistent with the character of the surrounding area, the proposed development support development adjacent the airport to help contain airport related land uses in the designated area;
- (iv) The proposal will have a safe and suitable access to the proposed service station, in close proximity to the airport.

15. HERITAGE

(ANNEXURE M: Heritage Authorisation)

A Notification of Intent to Develop was submitted to Heritage Western Cape during 2017 for the proposed development. Heritage Western Cape has notified that there is no reason to believe the proposed establishment of a service station located on Farm 208/4, George, will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.

This is a clear indication that the proposed development will have no impact on any heritage resources.

16. SOCIAL IMPACT ASSESSMENT

(ANNEXURE N: Social Impact Assessment)

Dr AH de Wit was appointed to conduct a Social Impact Assessment of the proposed development of a service station on a portion of Portion 4 of the Farm Gwayang (No 208).

The purpose of this Social Impact Assessment was to identify and assess the social impacts associated with the proposed development of a Service Station on a portion of Portion 4 of the Farm Gwayang (No 208), along the R404 route at the intersection that provides access to the George Airport.

The proposed Service Station is likely to exert much of its social influence at the local level, i.e. in the George Municipality. This area has witnessed a depressed economic outlook in recent times, with zero employment growth. The latter does not bode well for the plight of the town’s poor and

unemployed inhabitants. However, George has access to several strategic resources that count in its favour from the perspective of economic development. This includes well-developed commercial, financial and social infrastructure; quality conference facilities, businesses and retail services; extraordinary bio-physical and marine resources; and a growing regional tourism sector and major transport systems, including the N2 National Road and the George Airport.

To identify and assess the social impacts of the proposed Service Station, the research results were filtered through a range of possible social change processes and SIA categories. The following categories and social impacts were subsequently identified:

16.1. Socio-economic Impacts

The construction phase of the proposed Service Station will see the creation of temporary (short-term) employment opportunities. This will culminate in a positive social impact in the form of increased economic activity, poverty alleviation and favourable socio-economic implications (such as improved access to and consumption of goods and services, greater freedom of choice, better quality of life, and so on) for the affected individuals and their dependants.

The operational phase of the proposed Service Station will result in the creation of long-term permanent employment opportunities. This will also lead to a considerable social impact in the form of increased economic activity, poverty alleviation and favourable socio-economic implications (such as improved access to and consumption of goods and services, greater freedom of choice, better quality of life, and so on) for the affected individuals and their dependants.

16.2. Empowerment Impacts

The construction phase of the proposed Service Station could see the development and transfer of skills taking place in order to meet the necessary labour requirements. This will have a socio-economic importance that extends well beyond the period of the proposed development's construction phase. Relevant individuals will be able to sell their newly acquired skills within and beyond the boundaries of the local economy long after the completion of the construction phase.

The operational phase of the proposed Service Station could also see the development and transfer of skills taking place in order to meet the necessary labour requirements. Skills development and transfer will grant the formerly unskilled and/or unemployed access to permanent employment and associated benefits. This will have positive socio-economic implications for the individuals involved as well as their dependants.

16.3. Public Health and Safety Impacts

The proposed Service Station is likely to generate an increased traffic volume as far as the daily movement of its workforce and other construction related vehicular traffic is concerned. This could culminate in health and safety impacts through the potential increase in motor

vehicle and pedestrian related accidents. Relevant mitigation in this case however would decrease the impact significance dramatically.

16.4. Other Construction and Operational Phase Impacts

The proposed Service Station, during both the construction as well as the operational phase, will make a positive contribution to the Gross Geographic Product (GGP) of the George Municipality. The demand for goods and services during both phases will also have a positive impact on the local economy.

The proposed Service Station will represent a contribution to Local Economic Development, particularly around the George Airport. Here it would be strategically well situated to provide an essential supporting service to the tourism sector as well as a future industrial node in proximity to the N2 National Road and the George Airport.

16.5. Project Feasibility

The feasibility of the proposed Service Station was investigated via three important elements, i.e. the Need and Desirability for the proposed development; its financial feasibility; and potential Service Station developments on alternative sites. It was subsequently concluded that:

- (i) There is a positive Need and Desirability for the proposed Service Station;
- (ii) Its financial feasibility is confirmed; and
- (iii) The proposed site for this development is the only viable site.

The proposed Service Station will be a feasible development and the (mostly positive) social impacts associated with it, certain to happen.

17. FEASIBILITY STUDY

(ANNEXURE O: Service Station Feasibility Study)

During the pre-application consultation with the authorities, the need to investigate the feasibility of a third (3rd) filling station in this area was expressed. An investigation into the feasibility of a 3rd service station was conducted. The study considered the potential of the three sites to serve the needs of road users and the local community including the Airport, other commercial land uses such as the quarry and various nurseries, residential areas such as Herold's Bay and Glentana as well as the farming community between George and Groot Brak.

There are two competing proposals for service stations in the immediate vicinity of the proposed service station. These facilities are located on Portion 131 and Portion 84 of the Farm Gwayang. The first mentioned site is located on the south-eastern quadrant of the intersection of provincial roads R102 and R404. The other site is located on the north-western quadrant of the R404 and the Airport access road intersection.

Based on the current road and spatial planning of the Gwayang area that includes the Airport, the Airport Support Zone and the local residential, commercial and farming areas, it is clear that a service station must be developed on Portion 4. A service station serving the Airport with safe access from the road leading to unscheduled flights is also technically feasible and within the mandate of ACSA. This study concluded that:

- (i) The proposed location for the development of a service station on Portion 131 is not acceptable due to poor and inconvenient access.
- (ii) The proposed ACSA facility on Portion 84 is fatally flawed due to the non-compliance of the proposed access mini-circle with national and provincial road design guidelines. Access via the road to unscheduled flights is however acceptable and will serve some airport related land uses.
- (iii) The proposed facility on Portion 4 will meet all the road access requirements and will optimally serve the local market, including the residential, farming and commercial land uses.

SECTION D :**SPATIAL PLANNING INFORMANTS****18. EXISTING POLICY FRAMEWORKS**

This section will discuss the applicable policy frameworks that have an influence on any development proposal on the application area. These include:

18.1. National Development Plan

The National Development Plan aims to eliminate poverty and reduce inequality by 2030. South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society.

The National Development Plan recognises that education, training and innovation are central to South Africa's long-term development. These are core elements in eliminating poverty and reducing inequality, and the foundations of an equal society. Education empowers people to define their identity, take control of their lives, raise healthy families, take part confidently in developing a just society, and play an effective role in the politics and governance of their communities.

The National Development Plan is a broad strategic framework. It sets out a coherent and holistic approach to confronting poverty and inequality based on the six focused, interlinked priorities summarised below:

- Building Safer Communities
- Environmental Sustainability
- Faster and inclusive economic rural and urban economic growth
- Economic infrastructure
- Promoting Health
- Transforming human settlements and urban space economy.

The National development plan is divided into 15 chapters which outlines the objectives and actions necessary to achieve the overall vision for South Africa by 2030: The following policies have been identified have a bearing on the proposed development.

NDP Chapter 3

The following economic development policies are proposed that focus on removing the most pressing constraints on growth, investment and job creation, including energy generation and distribution and urban planning. These policies include the following:

- Promote Private Investment- Private Investment is linked with improved condition as a result of policy certainty, infrastructure delivery, and efficiency of public services which will improve quality of labour in surrounding areas.

- Improve spatial dynamics and rural employment- Encourage development close to rural townships. Rural economies will be activated through stimulation of agriculture and tourism investment.
- Establish economic and growth clusters – firm decisions need to be taken on sectors which could serve as platforms to launch new growth trajectories.
- Establish Tourism Clusters- Increase number of tourists entering the country and increase the average amount of money spent in regional economy.
- South Africa can do more to develop regions as international tourist destination by empowering the broader diversity and range of tourism destinations.

NDP Chapter 5

The following guiding principles are defined for the transition of all aspects from policy to process to action. Focus should be put in place to establish regulatory framework for proposed land uses, to ensure the conservation and restoration of the natural environment. These guidelines include the following:

- Strategic Planning – Apply a systems perspective, while ensuring an approach that is dynamic, with flexibility and responsiveness to emerging risk and opportunity, and effective management trade offs
- Transformative approach- Address all aspects of the current economy and society requiring amongst others visionary thinking and innovative planning
- Manage transition – build on existing process to attain gradual change and phased transition.
- Opportunity focus – for business growth, competitiveness and employment creation, that will contribute to equality and prosperity.
- Full cost accounting – Internalise externalities through full cost accounting
- Effective participation of social partners – Be aware of mutual responsibilities, engage on differences, seek consensus and exact compromise

NDP Chapter 8

Provincial Land use management systems overlap with local municipalities creating confusion and conflict. Provincial governments overseeing key economic activities such as agriculture tourism environmental management

Spatial developments should conform to the following normative principles and should explicitly indicate how they would meet the requirements of these principles. These principles are directly related to Section 42 of the Spatial Planning and Land Use Management Act 16 of 2013 which will be implemented as the primary spatial and Land Use Management legislation on the 1st of July 2015. These principles include:

Normative Principles for Spatial Planning	
Principle	Description
Spatial justice	The historic policy of confining particular groups to limited space, as in ghettoization and segregation, and the unfair allocation of public resources between areas, must be reversed to ensure that the needs of the poor are addressed first rather than last.
Spatial sustainability	Sustainable patterns of consumption and production should be supported, and ways of living promoted that do not damage the natural environment.
Spatial resilience	Vulnerability to environmental degradation, resource scarcity and climatic shocks must be reduced. Ecological systems should be protected and replenished.
Spatial quality	The aesthetic and functional features of housing and the built environment need to be improved to create liveable, vibrant and valued places that allow for access and inclusion of people with disabilities.
Spatial efficiency	Productive activity and jobs should be supported, and burdens on business minimised. Efficient commuting patterns and circulation of goods and services should be encouraged, with regulatory procedures that do not impose unnecessary costs on development.

18.2. Western Cape Provincial Spatial Development Framework (2014)

The Western Cape Provincial SDF was approved in 2014 by the Western Cape Parliament and serves as strategic spatial planning tool that “communicates the provinces spatial planning agenda”.

The recent shift in legislative and policy frameworks have clearly outlined the roles and responsibility of provincial and municipal spatial planning and should be integrated towards the overall spatial structuring plan for the province to create and preserve the resources of the province more effectively through sustainable urban environments for future generations. This shift in spatial planning meant that provincial inputs are in general limited to provincial scale planning.

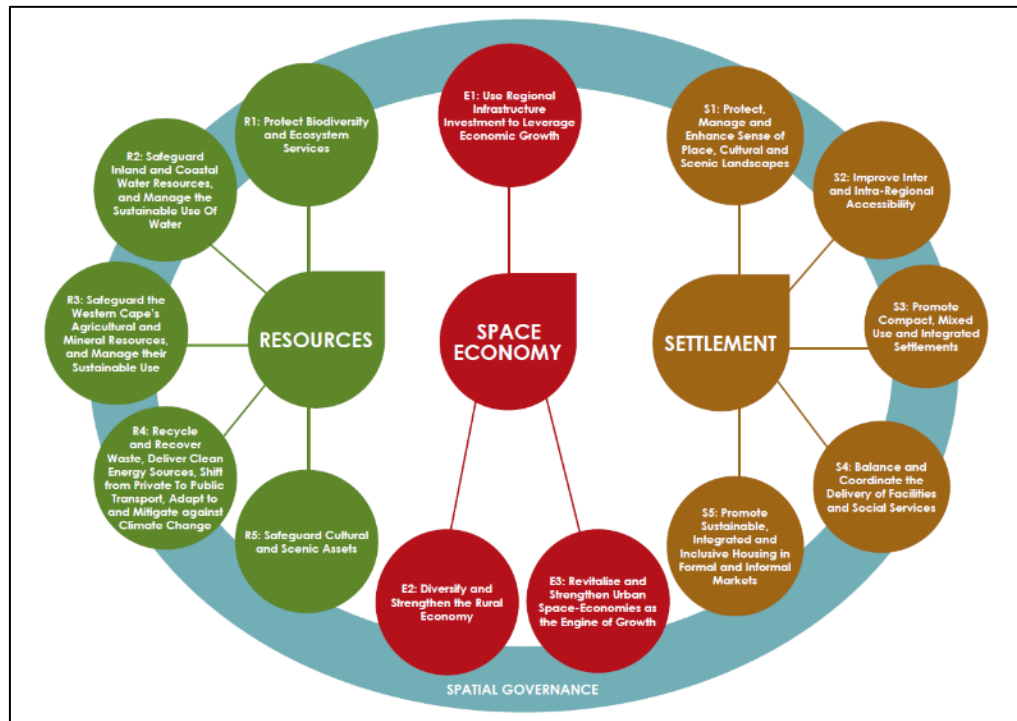
The PSDF emphasises the enhancement of the emerging regional industrial centre in George and Mossel Bay, as well as the Garden Route coastal belt as a leisure and tourism region

The proposed development compliments the SDF spatial goals that aim to take the Western Cape on a path towards:

- Greater productivity, competitiveness and opportunities within the spatial economy;
- More inclusive development in the urban areas;

- Strengthening resilience and sustainable development.

However, it is important to note some of the key policies laid down by the PSDF have a bearing on the application.



Policy E1: Use Regional Infrastructure Investment to Leverage Economic Growth

2. Use Regional or District SDFs as basis for addressing and reconciling competing and overlapping demands for regional economic infrastructure (e.g. regional airport).

Policy E3: Revitalise and Strengthen Urban Space-Economies as the Engine of Growth

5. Existing economic assets (e.g. CBDs, township centres, modal interchanges, vacant and under-utilised strategically located public land parcels, fishing harbours, public squares and markets, etc.) should be targeted to lever the regeneration and revitalisation of urban economies.

7. Incentives should be put in place to attract economic activities close to dormitory residential areas, facilitate brownfields development.

Policy S1: Protect, Manage and Enhance Sense of Place, Cultural and Scenic Landscapes

2. Promote smart growth ensuring the efficient use of land and infrastructure by containing urban sprawl and prioritising infill, intensification and redevelopment within settlements.

Policy S3: Ensure Compact, Balanced & Strategically Aligned Activities & Land Uses

This policy reflects the main aim of the policy through targeting economic assists (e.g. Modal Interchanges underutilised strategically located land parcels) should be used as a lever to regenerate and revitalise urban settlements.

Promoting functional integration and mix land use to increase liability of urban areas. Thus, the policy specifies the importance to- increase density of settlements and number of units in new housing projects; continue to deliver public investment to meet the needs in settlement developments; integrate packages of land, infrastructure and services as critical to promote densification and efficiency associated with agglomeration.

Planning Implication:

The Western Cape Spatial Development framework has a strong emphasis on revitalising urban spaces creating an urban living environment which is more convenient, efficient and aesthetically pleasing to residents. The proposed development aims to contribute to the regional economic infrastructure by developing airport related uses in close proximity of the regional airport. Thus, supporting the economic growth in the regional airport area. The proposed development supports the regeneration and revitalisation of urban economies specifically focusing on the areas adjacent the airport, which is earmarked for airport related development. Smart growth is promoted by ensuring efficient use of land and infrastructure by adhering to the structural plans for the area, ensuring development that is in line with the planning principles of the area. The development also supports a mixture of land uses in the area and upon operation of the service station it will attract new economic activities within the established neighbourhood contributing to a functional and urban integrated living environment which is strategically aligned with the surrounding land uses. Therefore, the proposal is consistent with strategic objectives as set out by the Western Cape Spatial Development Framework.

18.3. Eden District Spatial Development Framework (2017)

The Eden District Spatial Development Framework was approved by the Eden District Council and therefore this is the official spatial planning guideline for the Eden District Municipality.

According to the Eden SDF, George is identified as the major economic / services / education hub along the N2. George is envisaged as the primary regional ACSA commercial airport with recent accreditation as an international airport.

Growth Nodes are identified as settlements that have the economic, institutional and infrastructural capacity to accommodate new growth. Where reference is made to lateral spatial growth this is specified or referred to as sprawl, which is not desirable. The rationale in the SDF is *to encourage government and private sector investment in infrastructure and new housing opportunities in places where jobs and facilities are easily accessible* rather than develop new housing projects or government facilities in places that have no economic

opportunity or that have low growth potential. From a government investment and infrastructure development perspective, where funds are limited and need to be spent strategically, *capital investment should be predominantly focused on growth nodes over consolidation nodes.*

The Eden SDF acknowledges that the George airport is serviced by most of the operating airlines in the country and receives domestically operated flights, although limited to Cape Town, Port Elizabeth, Bloemfontein, Durban and Johannesburg. It is also used to export locally produced goods e.g. fresh cut flowers, oysters, herbs and ferns. It further states that passenger transport at the airport has increased significantly over the past few years up to 700 000 per annum (recorded in 2016). As a result, the present terminals are becoming too small and are being enlarged. The runway is 2 km long and needs to be expanded to at least 3 km in the future. The present handling of cargo presents a problem as services are required as early as 4h30 which would require additional staff.

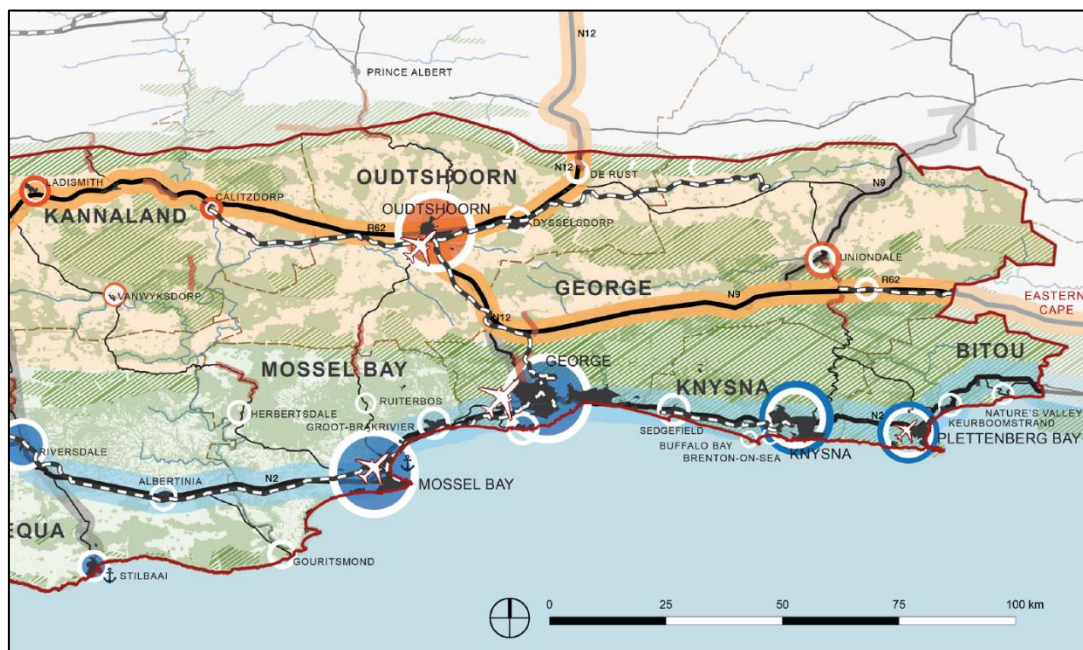


FIGURE 35: EDEN DISTRICT COMPOSITE SDF

The proposed development for a service station and warehousing at the George Airport, will strengthen the identified regional node, and therefore the proposed development is regarded as being consistent with the Eden SDF.

18.4. George Spatial Development Framework (2013)

The George Municipal Spatial Development Framework (SDF) was approved by George Municipal Council in May 2013. The SDF is therefore the primary spatial tool for guiding development within the municipal area. The SDF is the spatial manifestation of the municipal development agenda. The spatial perspective provides the development context for the SDF with a planning Vision, Mission and Guiding Principles.

The application area is located outside the demarcated urban edge of George. The SDF currently shows the application area is within an *Intensive Agriculture* area. Thus, it is necessary to establish what the Gwayang Local Spatial Development Framework envisions for the area, because it entails a more detailed development guideline for the specific area, which includes the subject property.

18.5. Gwayang Local Spatial Development Framework (2015)

George Airport plays a significant role in the Southern Cape's tourism industry and whether directly or indirectly, creates and supports jobs and economic growth for the George area.

Efficient airports are an essential part of the transport networks that all successful modern economies rely on. The George Airport is a crucial transport hub for the Southern Cape. As demand for travel increases, modern economies expect and demand a range of services and facilities at these transport hubs to improve their travel experience and to support their businesses. The George Airport is continuously improving on the service they render, which will also contribute to the development of the Southern Cape economy.

Currently the airport functions in isolation of the town and any complimentary commercial uses such as freight and logistics. Fuelling facilities are absent and there is no public transport to and from town for employees.

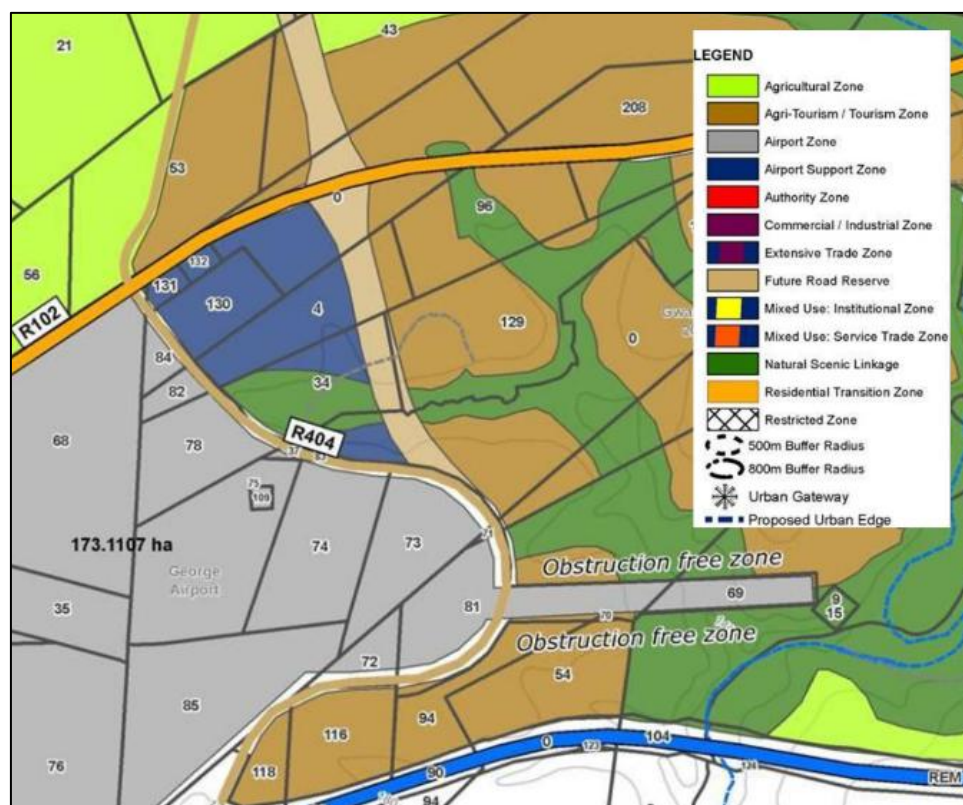


FIGURE 36: GWAYANG LOCAL SPATIAL DEVELOPMENT FRAMEWORK

The Gwayang Local Spatial Development Framework earmarks the land between the Western Bypass and the airport for **Airport Support Zone**.

The airport support zone are the properties opposite the airport with the alignment of the future bypass road as the boundary thereof. Land uses will be strictly limited to those uses that will support tourists and airport facilities that cannot be located in the town with the same practical function.

It is ideally located to provide facilities for tourism support as well and may include fuelling facilities and a hotel.

Thus, the development proposal in within the desired area for airport related land uses. As mentioned the Gwayang Local Spatial Development Framework states that fuelling facilities are absent in the area, thus the development will contribute to the demand of fuelling facilities.

The Gwayang Local Spatial Development Framework identifies a new sub-regional industrial node in proximity to the N2 and airport, targeted at Southern Cape manufacturing, freight and logistics, and service industries. The development will support the establishment of the proposed node in the area.

From the above discussion regarding the George and Gwayang SDF; the following conclusion can be made:

- (i) The George SDF indicate that the application area is situated within an Intensive Agriculture area;
- (ii) Even though outside the urban edge and the subject property is within an *Intensive Agriculture* area, one has to consider the Gwayang Local Spatial Development Framework, which focuses on the area specifically around the George Airport, where the subject property is located;
- (iii) The proposal is consistent with the Gwayang Local Spatial Development Framework for the following reasons:
 - a) The proposed development is within the Airport Support Zone;
 - b) Land uses will be strictly limited to those uses that will support tourists and airport facilities that cannot be located in the town with the same practical function;
 - c) This area is envisaged as a small node at the intersection to the airport;
 - d) It is aimed at providing opportunities for land uses that are reconcilable with the airport such as freight and logistics companies and tourist facilities. Parking and storage facilities are also possibilities for this zone however special attention needs to be given to the aesthetics;
 - e) A further transport related problem is the absence of fuelling facilities at or near the airport for both employees and tourists;
 - f) A tourist and service centre on the corridor linked with the entrance of the airport could provide tourists wit basic services. These services

may include fuelling facilities for a rental vehicle, vehicle storage facilities for overnight travellers, hotel accommodation and support for passengers that may have lost their luggage, tourist information centre, etc.

18.6. George Integrated Development Plan

Integrated development planning is a process by which the George Municipality prepares a municipal-wide plan, known as the Integrated Development Plan (IDP). The process and plan are linked to a five-year planning and implementation time-frame that coincides with local government elections. The plan is reviewed annually in accordance with the yearly budget cycle.

This document represents the fourth review of the George Municipality's IDP for the current planning and implementation time-frame, i.e. 2012 to 2017 and considers the 2016/2017 budget cycle. The document must be read together with the original IDP, the first review, second review, third reviews and the comprehensive suite of municipal-wide sector plans.

The property of the proposed development is situated in Ward 23 (Bos en Dal, Buffelsfontein, Delville Park, Groenewyde Park, Hansmoeskraal, Herolds Bay, Le Grande, Oubaai, Rooirivierrif, Syferfontein). The development needs that were identified in Ward 23 are summarised in the table below:

Focus Area	Development needs
Municipal services	
Water & Sanitation	<ul style="list-style-type: none"> Sub-standard maintenance of facilities: roads, pools, public toilets, pavements. Provision of more toilet facilities (in a better condition) for the growing population and informal areas. Upgrading of the two ablution blocks and other facilities at the beachfront
Roads & Storm water	<ul style="list-style-type: none"> Reparation of Rooidraai Street General safety on roads in and around George e.g. pedestrians on highway or crossing over, airport intersection, bicycles along the road with no shoulders or yellow lines.
Traffic Control	<ul style="list-style-type: none"> More law enforcement officers must be employed. Police service is not effective. Appointment of sufficient law-enforcement staff
Other	<ul style="list-style-type: none"> Provision of permanent structures for hawkers on beachfront Restoration of bridge at tidal pool Wards 2,3,5,18,19,23: <ul style="list-style-type: none"> Ensure that road markings are visible Provide speed humps Provide street lighting

Focus Area	Development needs
	<ul style="list-style-type: none"> - Ensure efficient public transport system - Ensure that trees do not interfere with safety of pedestrians
Needs relating to other spheres of government	
Health	<ul style="list-style-type: none"> ▪ Clinics for informal areas: Syferfontein and mobile clinic service for the rural areas.
Safety & Security	<ul style="list-style-type: none"> ▪ More law enforcement officers must be employed. ▪ Police service is not effective
Other	<ul style="list-style-type: none"> ▪ General safety on roads in and around George e.g. pedestrians on highway or crossing over, airport intersection, bicycles along the road with no shoulders or yellow lines.

The IDP was reviewed and the ward was identified wherein the proposed development is located. Part from what is discussed above there is no relevant legislation in the IDP applicable to the specific location of the proposed development.

SECTION E :**MOTIVATION****19. ASSESSMENT OF APPLICATIONS****19.1. The Spatial Planning and Land Use Management Act, 2013 (16 of 2013)**

The Spatial Planning and Land Use Management Act (SPLUMA) came into effect on 1 September 2014. One of the main objectives of this act is to provide a framework for spatial planning and land use management to address past spatial and regulatory imbalances.

Section 42 of SPLUMA prescribe certain aspects that have to be taken into consideration when deciding on an application. These are:

- development principles set out in Chapter 2 of SPLUMA
- protect and promote the sustainable use of agricultural land
- national and provincial government policies
- the municipal spatial development framework; and
- take into account—
 - a. the public interest;
 - b. the constitutional transformation imperatives and the related duties of the State;
 - c. the facts and circumstances relevant to the application;
 - d. the respective rights and obligations of all those affected;
 - e. the state and impact of engineering services, social infrastructure and open space requirements; and
 - f. any factors that may be prescribed, including timeframes for making decisions.

19.2. Land Use Planning Bylaw for George Municipality, 2015

George Municipality adopted its new Land Use Planning By-law and it came into effect on 1 September 2015. All land use applications are now being processed and assessed in terms of this by-law. This by-law states that the following aspects will be considered when the decision are made:

- desirability of the proposed utilisation of land
- the impact of the proposed land development on municipal engineering services
- the integrated development plan, including the municipal spatial development framework
- provincial spatial development framework
- policies, principles and the planning and development norms and criteria set by the national and provincial government
- the matters referred to in section 42 of the Spatial Planning and Land Use Management Act

- principles referred to in Chapter VI of the Land Use Planning Act
- applicable provisions of the zoning scheme

20. CONSISTENCY WITH SPATIAL POLICY DIRECTIVES

This application is consistent with all the approved spatial policy frameworks that apply to the area. Refer to Paragraph 18 for a detailed discussion on the consistency of the proposal with current spatial policy frameworks for the area.

- i. This development application is consistent with the approved statutory spatial policy framework for the area.
- ii. The proposal is consistent with the strategic objectives as set out by the Western Cape Spatial Development Framework.
- iii. The proposal is consistent with the Eden District SDF.
- iv. The George SDF indicate that the application area is situated within an Intensive Agriculture area.
- v. Even though outside the urban edge and the subject property is within an Intensive Agriculture area, one has to consider the Gwayang Local Spatial Development Framework, which focuses on the area specifically around the George Airport, where the subject property is located.
- vi. The proposal is consistent with the Gwayang Local Spatial Development Framework.
- vii. The IDP was reviewed and the ward was identified wherein the proposed development is located. Part from what is discussed above there is no relevant legislation in the IDP applicable to the specific location of the proposed development.

21. CONSISTENCY WITH THE CHARACTER OF THE SURROUNDING AREA

The locality of the proposed development is ideal to use for the expansion of airport related uses. The property is adjacent to the airport and falls within the area that is earmarked for expansion of airport related facilities.

The proposed development will contribute to the character of the airport area, and it will also support the development of airport related uses adjacent to the George Airport.

22. NEED AND DESIRABILITY

22.1. Need

The need for the project has largely been dealt with elsewhere in this document, however for ease of reference these considerations will be highlighted here. Need, as defined by DEADP refers to the timing of the proposal, as such the question '*do we need this development now?*' In answering this question, the forward planning and land use policy of the area must be examined. Therefore, the consistency with the existing approved Spatial Development Framework (SDF), the current Integrated Development Plan (IDP) and other

municipal planning policy is important in the consideration of need – refer to Section D of this report.

Further considerations of need include the need of the community/area of the activity & land use – is the development “a societal priority”?

The proposed development entails the construction of a traffic circle and a new fuelling station with a station shop. The subject property is within close proximity of the George Airport and falls within an area earmarked as an Airport Support Area. This area will only support uses that are related to airport facilities. Thus, the proposed development is aimed at the need of airport related uses in close proximity of the existing airport, to help contribute to the industrial/commercial node the structure plans envisage for the area. The Gwayang Local Spatial Development Framework clearly state that their absence of fuelling facilities at or near the airport, thus it will provide the much-needed facility. It is aimed at providing opportunities for land uses that are reconcilable with the airport such as freight and logistics companies and tourist facilities. There is a need for expanding the airport and airport facilities. Thus, the area surrounding the George Airport is limited to those uses that will support tourists and airport facilities that cannot be located in the town with the same practical function. This development is there to contribute to the need of a fuelling station and a tourist and service centre on the corridor linked with the entrance of the airport could provide tourists with basic services. The economic development to the area is more likely to fulfil the societal need for additional employment opportunities within George.

Need for a project also relates to the services capacity and consistency with infrastructure planning – this issue will be dealt with by the various engineers involved with this project including the civil, electrical and traffic engineering specialists.

There is a strong need for the economic development around the George Airport to establish a new sub-regional industrial node in proximity to the N2 and airport, targeted at Southern Cape manufacturing, freight and logistics, and service industries. The provision of a fuelling station and station shop would contribute to the development of additional airport related uses in an area earmarked for the particular uses by providing a mix of employment opportunities, supporting development consistent with the planning policies of the area, decreasing the need of a fuelling station in the airport area without adversely impacting on the environment. There is therefore a strong need for this development at this time.

22.2. Desirability

The desirability of a proposed development also relies heavily on the consistency with policy documentation, but has a distinctly spatial focus. This issue has also been dealt with in Section D above.

The guideline on Need and Desirability specifically poses the question *"Would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF as agreed to by the relevant authorities?"* The information provided in Section D of this report clearly demonstrates that the proposal is in line with the planning policy applicable to the area.

NEMA also links the desirability of a development to the concept of the *"best practicable environmental option"*; this refers to the option that provides the most benefit and *causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term*. The consideration of alternatives is therefore closely related to this concept – because the property is not viable to be used for agricultural activities a realistic option is to develop the property as discussed in the report.

Specific locational factors that favour the proposed land-use are also important when desirability is assessed. Very close attention was paid to the location of the site, which took into account the wider situation. These factors include:

- The proximity of the property to the existing George Airport – the property is opposite the airport; the entrances are across from one another. The proposed development is within the Airport Support Zone.
- The property is easily accessible – there is an existing entrance to the property that would allow for easy and safe access, once it is tarred and the proposed traffic circle is developed.
- This area is envisaged as a small node at the intersection to the airport. The development contributes to the establishment of the node.
- The proposal will support tourists and airport facilities that cannot be located in the town with the same practical function.
- The property provides an ideal setting to further a tourist and service centre on the corridor linked with the entrance of the airport could provide tourists with basic services
- The site of the proposed development is vacant and the area falls outside any environmental protected areas.

Potential impacts to the character of the area, people's rights, and health and wellbeing are also important considerations of desirability. The proposed development will benefit from the vision to establish a new sub-regional industrial node in the area, because it will contribute to the establishment of the node and to the character of the area. The architectural design of the proposed development will be built according to the topography of the land specifically to maintain harmony with the landscape and limit visual impact.

Since the proposal is largely in line with the spatial planning for the area, allows for several positive impacts on the wider economy it can be concluded that the proposal is desirable for the selected site.

23. LOCATIONAL FACTORS

Specific locational factors that favour the land development application is important when desirability is assessed. The factors include:

- (i) The proposed development is within the Airport Support Zone;
- (ii) Land uses will be strictly limited to those uses that will support tourists and airport facilities that cannot be located in the town with the same practical function;
- (iii) This area is envisaged as a small node at the intersection to the airport;
- (iv) It is aimed at providing opportunities for land uses that are reconcilable with the airport such as freight and logistics companies and tourist facilities. Parking and storage facilities are also possibilities for this zone however special attention needs to be given to the aesthetics;
- (v) A further transport related problem is the absence of fuelling facilities at or near the airport for both employees and tourists;
- (vi) A tourist and service centre on the corridor linked with the entrance of the airport could provide tourists with basic services. These services may include fuelling facilities for a rental vehicle, vehicle storage facilities for overnight travellers, hotel accommodation and support for passengers that may have lost their luggage, tourist information centre, etc.

24. IMPACT ON INFRASTRUCTURE

As per the various specialist studies it is concluded that a proposed development for a new service station; warehousing, and Airport Support Service is economically feasible as well as environmental friendly. Standard development to allow for the required services will be necessary, however the Municipality has confirmed that there is sufficient existing capacity to serve the proposed development.

24.1. Water

- (i) Potable water will be supplied from the existing reticulation system feeding from the existing municipal water supply line along the R404 near the entrance to the George airport.
- (ii) George Municipality indicated that the existing network should have the capacity to accommodate the proposed development of the proposed service station / retail facility and no upgrade of the existing main water supply line will be required.

24.2. Electricity

- (i) The Supply Authority will be George Municipality.
- (ii) The Electrical Services Report also make reference to a letter, dated 17 March 2017, from the Municipality confirming that their MV network has sufficient spare capacity to supply Phase 1 (service station).

- (iii) Also contained in the Electrical Services Report is a letter from CMB, dated 9 November 2017, to the Municipality to confirm that their MV network also has sufficient spare capacity to supply the combined load of Phase 1 (service station) and 2 (industrial zoned erven).

24.3. Sewer

- (i) George Municipality indicated that the existing municipal network should have the capacity to accommodate the proposed development and no upgrade of the existing pump station or sewer line will be required.

24.4. Traffic

- (i) The results of the capacity and operational analyses show that the proposed intersection can easily accommodate the expected additional vehicle trips, not only in terms of the design horizon year (2022), but also when the Airport Support Zone is fully developed for warehousing in the planning horizon year 2035.
- (ii) The Professional Traffic Engineer it is evident that the proposed intersection can easily accommodate the expected additional vehicle trips. It is also the professional opinion that the proposed service station on Portion 4 of Farm Gwayang No 208 is the most desirable location as it will have adequate access and is able to accommodate the traffic volumes.

24.5. Access

- (i) Access to the property will be obtained via the R404 road. The current and proposed access to the property is opposite the existing entrance to the George Airport. The development also entails a proposed traffic circle.
- (ii) The Professional Traffic Engineer it is evident that the proposed intersection can easily accommodate the expected additional vehicle trips.

24.6. Solid waste

- (i) The removal of all solid general waste by Municipal contractors will take place from the mandatory enclosed waste service yards at each of the service station / light industrial erven and will be accessible from the access road.

24.7. Storm Water

- (i) In order to counter the expected increase in peak runoff resulting from the urbanisation, storm water attenuation structures are proposed to be developed on each property to be developed on Portion 4. This will limit flow velocities to pre-development rates and consequently protect the receiving system from scouring and erosion.

- (ii) Attenuation structures are proposed to adjust the post-development runoff hydrograph to show a peak runoff rate equal to or less than the pre-development hydrograph.

25. IMPACT ON THE COMMUNITY

For a detailed social-economic assessment refer to Paragraph 16 of this report.

25.1. Socio-Economic Impacts

- (i) The construction phase of the proposed Service Station will see the creation of temporary (short-term) employment opportunities.
- (ii) The operational phase of the proposed Service Station will result in the creation of long-term permanent employment opportunities.

25.2. Empowerment Impacts

- (i) The construction phase of the proposed Service Station could see the development and transfer of skills taking place in order to meet the necessary labour requirements.
- (ii) The operational phase of the proposed Service Station could also see the development and transfer of skills taking place in order to meet the necessary labour requirements.

25.3. Other Construction and Operational Phase Impacts

- (i) The proposed Service Station, during both the construction as well as the operational phase, will make a positive contribution to the Gross Geographic Product (GGP) of the George Municipality. The demand for goods and services during both phases will also have a positive impact on the local economy.
- (ii) The proposed Service Station will represent a contribution to Local Economic Development, particularly around the George Airport. Here it would be strategically well situated to provide an essential supporting service to the tourism sector as well as a future industrial node in proximity to the N2 National Road and the George Airport.

26. SPATIAL PLANNING AND LAND USE MANAGEMENT ACT (ACT 16 OF 2013)

One of the main objectives of SPLUMA is to provide a framework for spatial planning and land use management to address past spatial and regulatory imbalances. This section illustrates how the application is consistent with the 5 main development principles applicable to spatial planning, land use management as set out in Section 42 of SPLUMA.

26.1. Spatial Justice

Criteria	Compliance	Planning Implication
Past spatial and other development imbalances must be redressed through improved access to and use of land.	Not applicable	This policy is not applicable to the application area.
Spatial development frameworks and policies at all spheres of government must address the inclusion of persons and areas that were previously excluded, with an emphasis on informal settlements, former homeland areas and areas characterised by widespread poverty and deprivation.	Not applicable	This policy is not applicable to the application area.
Spatial planning mechanisms, including land use schemes, must incorporate provisions that enable redress in access to land by disadvantaged communities and persons.	Not applicable	This policy is not applicable to the application area.

26.2. Spatial Sustainability

Criteria	Compliance	Planning Implication
Promote land development that is within the fiscal, institutional and administrative means of the Republic.	Comply	<p>The development complies with Gwayang Local Spatial Development Framework (2015).</p> <p>The proposed development is within the Airport Support Zone as per the Gwayang Local Spatial Development Framework (2015).</p> <p>Land uses will be strictly limited to those uses that will support tourists and airport facilities that cannot be located in the town with the same practical function.</p>
Ensure that special consideration is given to the protection of prime and unique agricultural land.	Comply	<p>The application area is located outside the urban edge.</p> <p>The George SDF indicate that the application area is situated within an Intensive Agriculture area.</p> <p>Even though outside the urban edge and the subject property is within an Intensive Agriculture area, one has to consider the Gwayang Local Spatial Development Framework, which focuses on the area</p>

Criteria	Compliance	Planning Implication
		<p>specifically around the George Airport, where the subject property is located.</p> <p>The proposal is consistent with the Gwayang Local Spatial Development Framework</p>
Uphold consistency of land use measures in accordance with environmental management instruments.	Comply	<p>The proposal aims to be as environmental sensitive as possible.</p> <p>Various specialist report and inputs have been acquired to mitigate any sort of environmental impact.</p> <p>It is the considered opinion of various professionals that the proposal will not have a considerable impact on the environment and that the proposal could be accommodated.</p> <p>The proposal will adhere to all mitigation requirements and recommendations as per the professional standards.</p>
Promote and stimulate the effective and equitable functioning of land markets.	Comply	<p>The development aims to promote land development.</p> <p>The proposed development is located adjacent the George Airport within the Airport Support Zone.</p> <p>The proposed development will contribute to the functional land pattern in the surrounding area.</p> <p>Proposed development will support tourists and airport facilities that cannot be located in the town with the same practical function.</p> <p>The proposed development will contribute to the character of the surrounding area.</p>
Consider all current and future costs to all parties for the provision of infrastructure and social services in land developments.	Comply	<p>The proposal will make use of existing service infrastructure capacity, as confirmed by the George Municipality.</p> <p>Any upgrades and additional development regarding service infrastructure will be at the cost of the developer / land owner.</p>
Promote land development in locations that are sustainable and limit urban sprawl; and result in communities that are viable.	Comply	<p>The proposed development is located adjacent the George Airport within the Airport Support Zone.</p> <p>The proposed development will contribute to the functional land pattern in the surrounding area.</p> <p>Proposed development will support tourists and airport facilities that cannot be located in the town with the same practical function.</p>

26.3. Spatial Efficiency

Criteria	Compliance	Planning Implication
Land development optimises the use of existing resources and infrastructure.	Comply	<p>Development will make use of existing local resources and contribute to specialised skills development within the local municipality.</p> <p>The proposed development is aimed at providing opportunities for land uses that are reconcilable with the airport such as freight and logistics companies and tourist facilities.</p> <p>It will contribute to smart growth and will contribute to the character of the surrounding area promoting airport related services in the area.</p> <p>The proposal will make use of existing infrastructure networks without having to expand the services network.</p>
Decision-making procedures are designed to minimise negative financial, social, economic or environmental impacts.	Not Applicable	The municipality should process this application within the prescribed time frames of the George Municipality By-law on Municipal Land Use Planning (2015).
Development application procedures are efficient and streamlined and timeframes are adhered to by all parties.	Not Applicable	The municipality should process this application within the prescribed time frames of the George Municipality By-law on Municipal Land Use Planning (2015).

26.4. Spatial Resilience

Criteria	Compliance	Planning Implication
Flexibility in spatial plans, policies and land use management systems are accommodated to ensure sustainable livelihoods in communities most likely to suffer the impacts of economic and environmental shocks	Comply	<p>The proposal is in line with the various spatial plans, zoning scheme and policies, as motivated in the report.</p> <p>A problem identified in the area is the absence of fuelling facilities at or near the airport for both employees and tourists. The proposal will assist in addressing the needs for fuelling facilities in the area.</p>

26.5. Good Administration

Criteria	Compliance	Planning Implication
All spheres of government ensure an integrated approach to land use and land development that is guided by the spatial planning and land use management systems as embodied in this Act.	Applicable to Knysna Municipality	This principle has no direct bearing on the application, however, the Knysna municipality is obligated to consider the application fairly and within the timeframes provided in terms of the municipal planning bylaw.

Criteria	Compliance	Planning Implication
All government departments must provide their sector inputs and comply with any other prescribed requirements during the preparation or amendment of spatial development frameworks.		What is however important is that all decision making is aligned with sound policies based on nation, provincial and local development policies.
The requirements of any law relating to land development and land use are met timeously.		
The preparation and amendment of spatial plans, policies, land use schemes as well as procedures for development applications, include transparent processes of public participation that afford all parties the opportunity to provide inputs on matters affecting them.		
Policies, legislation and procedures must be clearly set in order to inform and empower members of the public.		

27. CONCLUSION

The proposed development as envisaged is consistent with the various policy guidelines of this area. It is the considered opinion that the proposed development will achieve a sensitive balance between, the built environment and the socio-economic environment, that is imperative to ensure sustainable development.

In light of this motivation, it is clear from the foregoing report that the application for:

- (i) The rezoning of Portion 4 of the Farm Gwayang No 208 from "Agriculture Zone I" to "Subdivisional Area" in terms of Section 15(2)(a) from the Land-Use Planning By-Law for George Municipality, 2015.
- (ii) The subdivision of Portion 4 of the Farm Gwayang No 208 into 14 Portions (7 x Industrial Zone I portions; 1 x Business Zone VI portion; 1 x Transport Zone II portion; 4 x Open Space Zone II portions & 1 x Agriculture Zone I portion (the Remainder)) in terms of Section 15(2)(d) from the Land-Use Planning By-Law for George Municipality, 2015;

PROPOSED REZONING & SUBDIVISION: PORTION 4 OF THE FARM GWAYANG NO 208

Meets the criteria as set out in The Spatial Planning and Land Use Management Act (SPLUMA) and the Oudtshoorn Land Use Planning Bylaw, is desirable and it is therefore recommended that the application be supported by the relevant authorities and approved by Oudtshoorn Municipality.

Marika Vreken Urban and Environmental Planners
August 2018

Our Ref: Pr1648b21

13 May 2021

Your Ref: Gwayang 208/4, George

By E-mail: Cpetersen@george.gov.za
Jfourie@george.gov.za
Mhwelman@george.gov.za

The Directorate: Planning & Development
George Municipality
P.O. Box 19
6530

FOR ATTENTION: MS J FOURIE

Dear Madam,

**PROPOSED REZONING & SUBDIVISION: PORTION 4 OF FARM GWAYANG NO 208,
DIVISION GEORGE, GEORGE MUNICIPALITY**

Reference is to our application for the rezoning and subdivision of Portion 4 of the Farm Gwayang No 208, dated 8 August 2018, that was submitted to George Municipality.

1. Since this land development application was submitted, the new George Airport Roads Master Plan was approved, and an Environmental Authorisation (EA) was issued by the Department of Environmental Affairs and Development Planning. The implication of this EA is, that the access road, as proposed on our initial layout, had to move, in order to be in accordance with the approved new Airport Roads Master Plan.
2. Section 52 of the George Municipality's Land Use Planning Bylaw makes provision for an applicant to amend a pending application, before a decision is made on the application. We therefore wish to amend the pending application to allow for the realigned access road. We attach a copy of the new proposed layout for Portion 4 of the Farm Gwayang No 208, George.
3. Comparison of old layout, vs new layout:

The table below, provides a summary of the old layout, vs the proposed new layout:

	August 2018 Application	New Amended Application	Comments
Industrial Zone I	7x erven	5x erven	<i>Minus 2 erven</i>
1x "Business Zone VI"	1x "Business Zone VI"	No Change	<i>No Change</i>

	August 2018 Application	New Amended Application	Comments
1x "Transport Zone II"	1x "Transport Zone II"	No Change	<i>Alignment amended in accordance with approved Roads Master Plan</i>
"Open Space Zone II"	4x "Open Space Zone II"	zero	<i>Open Spaces removed, storm water retention areas accommodated as servitudes.</i>
"Agriculture Zone I"	1x Remainder	1x Remainder	<i>Western Bypass accommodated in Remainder</i>
Utility Zone	None	1x Utility Zone Property	<i>1x new Utility zone property is proposed, at 1.6565ha in extent, to allow for a solar farm and waste water treatment works.</i>

4. The previous proposal included 3x phases, whereas the new proposal includes 5x phases as shown in the figure below:

- Phase 1: proposed filling station;
- Phase 2: consist of the 3x industrial erven between the filling station and Gwayang Avenue;
- Phase 3: includes 2x industrial erven west of the proposed "Western Bypass"
- Phase 4: includes the proposed utility erf (Erf 8) to the east of the proposed "Western Bypass". Since access to this portion is cut off by the "Western Bypass", a new right of way access is proposed over Portion 139 of Farm no 208, to the north eastern boundary of the application area (Portion 4 of Farm No 208).
- Phase 5: Remainder – the "Western Bypass"

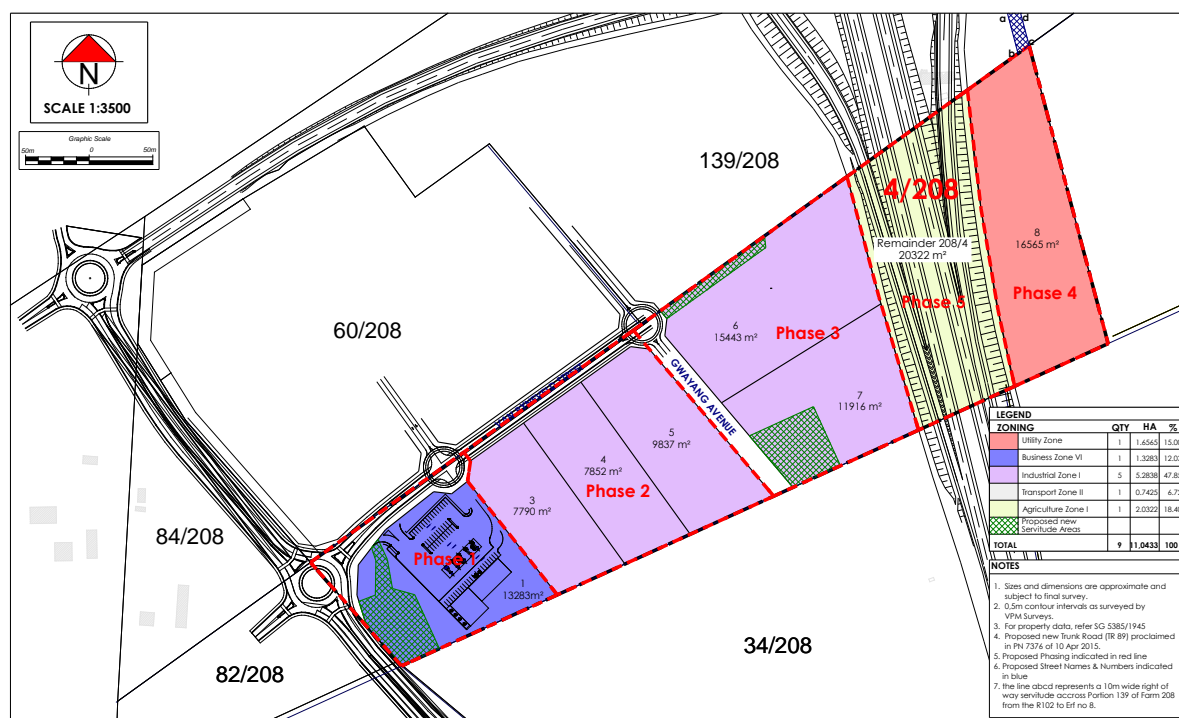


FIGURE 1: UPDATED LAYOUT PLAN WITH PHASING

5. It is the considered opinion, that the proposed amendments as "non-material".
6. It should further be noted that a settlement agreement has been reached between the applicant, George Municipality, as well as Dynarc Capital(Pty)Ltd & George Aerotropolis(Pty)Ltd (*joint owners of Remainder of Portion 60 of Farm No 208 / Portions 130 & 132 of Farm No 208*). We herewith attach a copy of a memorandum of settlement and cooperation, for your records.
7. Since the initial land development application was submitted pre-covid, we herewith attach the original land development application, with all annexures, as per your Covid Guidelines for compilation and submission of land development applications, dated 1 February 2021.
8. The pending NEMA Authorisation process will also be amended in accordance with proposed amendment.

We trust the above is in order. Kindly acknowledge receipt of this correspondence and confirm whether you require any additional information in this regard.

Yours sincerely,

MARIKE VREKEN

Pr. Pln 1101 M SAPI 10233

CC: Gerhard Wagenaar - wagenaar@mweb.co.za
 Gustav Terblanche - witsand@gmail.com
 Flip Joubert - Flip@iceisp.co.za

Our Ref: Pr1648b28
Your Ref: Gwayang 208/4, George

8 September 2021

By E-mail: Cpetersen@george.gov.za
Jfourie@george.gov.za
Mhwelman@george.gov.za

The Directorate: Planning & Development
George Municipality
P.O. Box 19
GEORGE
6530

FOR ATTENTION: MS J FOURIE

Dear Madam,

**PROPOSED REZONING & SUBDIVISION: PORTION 4 OF FARM GWAYANG NO 208,
DIVISION GEORGE, GEORGE MUNICIPALITY**

Reference is to our application for the rezoning and subdivision of Portion 4 of the Farm Gwayang No 208, dated 8 August 2018, as well as the amended layout that was submitted to George Municipality on 18 May 2021.

The following Annexures are attached to this correspondence.

- Annexure A.** Amended Layout Plan
 - Annexure B.** Updated Electrical Services Report
 - Annexure C.** Act 21 of 1940 approval from the Provincial Roads Authority
 - Annexure D.** Correspondence from CEN to DEADP confirming updated layout to consider in the NEMA Authorisation process.
1. This application is still under consideration by the Department of Environmental Affairs, and the Western Cape Department of Environmental Affairs and Development Planning (DEADP) has indicated that the proposed "utility site" that was included in the layout, constitutes a new listed activity, and for that reason the amended layout cannot be considered in the current, pending application for "Environmental Authorisation". For this reason, the proposed layout had to be amended again, to exclude the former proposed "utility site".

2. The DEADP also queried the removal of the private opens spaces that accommodated the existing storm water drainage lines (water courses), and for that reason, the proposed private open spaces were “reintroduced” in the layout, in accordance the original application, and in accordance with the wetland specialist report.
3. Section 52 of the George Municipality’s Land Use Planning Bylaw makes provision for an applicant to amend a pending application, before a decision is made on the application. We therefore wish to amend the pending application to allow for the realigned access road. We attach a copy of the new proposed layout for Portion 4 of the Farm Gwayang No 208, George.
4. We attach a copy of the amended layout as ***Annexure A***. The previous amended proposal included 5x phases, whereas the new proposal includes 4x phases as shown in the figure below:
 - Phase 1: proposed filling station;
 - Phase 2: consist of the 3x industrial erven between the filling station and Gwayang Avenue;
 - Phase 3: includes 2x industrial erven west of the proposed “Western Bypass”.
 - Phase 4: includes the remainder of the farm and the approved “Western Bypass”.

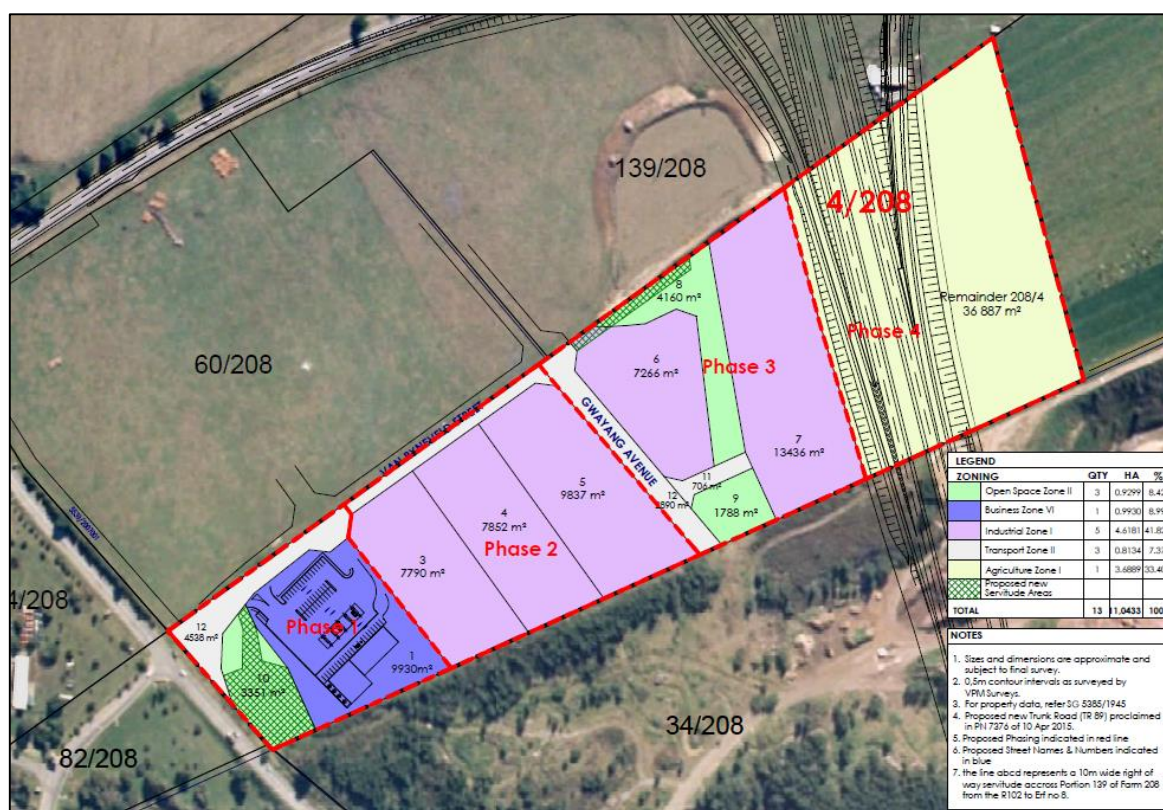


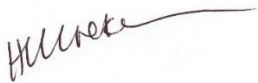
FIGURE 1: UPDATED LAYOUT PLAN WITH PHASING

5. It is the considered opinion, that the proposed amendments are “non-material”.
6. We attach a copy of the updated Electrical Services Report as requested by your Electrical Engineers (refer ***Annexure B***).

7. We also attach a copy of the Act 21 of 1940 approval as received from the Provincial Roads Authority, for your records (refer **Annexure C**).
8. The pending NEMA Authorisation process was amended in accordance with proposed amendment, and we also attach correspondence from CEN (the appointed environmental consultants for this development), to DEADP, informing them of the amended layout (correspondence dated 25 August 2021), as **Annexure D**. We expect to receive the Environmental Authorisation before the end of the year.

We trust the above is in order. Kindly acknowledge receipt of this correspondence and confirm whether you require any additional information in this regard, to enable you to assess the application, and to prepare a recommendation to your Municipal Planning Tribunal for a decision.

Yours sincerely,



MARIKE VREKEN

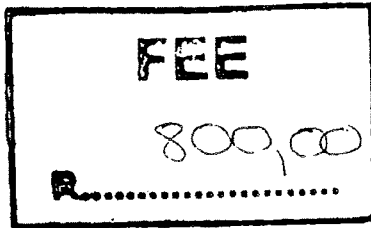
Pr. PIn 1101 M SAPI 10233

CC: Gerhard Wagenaar - wagenaar@mweb.co.za
Gustav Terblanche - witsand@gmail.com
Flip Joubert - Flip@iceisp.co.za

Raubenheimers Ing
Posbus 21
Cathedralstraat 60
George
6530

Opgestel deur my

TRANSPORTBESORGER
LUTTIG WM



TRANSPORTAKTE

HIERBY WORD BEKEND GEMAAK DAT

T 010434 / 10

RONEL ELS

voor my verskyn het, REGISTRATEUR VAN AKTES te Kaapstad, hy die genoemde
komparant synde behoorlik daartoe gemagtig deur 'n Volmag aan hom verleen deur

ABRAHAM JACOBUS DE SWARDT

Identiteitsnommer 490929 5061 08 7

Getroud buite gemeenskap van goed

geteken te GEORGE op 26 Januarie 2010

DATA / VERIFY
29 MAR 2010
BARLOW M

IKERENAAR: DATAVERLEGGING: COMPUTER DATA CAPTURE		
	DATE/TIME	OPERATOR: (SIGN)
FILED: SENTINEL	2/2	

En genoemde Komparant het verklaar dat sy prinsipaal, op 8 Januarie 2010, waarlik en wettiglik verkoop by Privaat ooreenkoms, en dat hy, in sy voorgenoemde hoedanigheid hierby sedeer en transporteer aan en ten gunste van

8 MILE INVESTMENTS 236 (EIENDOMS) BEPERK
Registrasienommer 2004/029922/07

diese Opvolgers in titel of Regverkrygendes in volkome en vrye eiendom,

RESTANT GEDEELTE 4 VAN DIE PLAAS GWAYANG NOMMER 208 in die
Munisipaliteit en Afdeling van George, WES-KAAP PROVINSIE

GROOT 11,0433 (ELF KOMMA NUL VIER DRIE DRIE) Hektaar

EERSTE OORGEDRA kragtens Verdelingstransportakte Nr T4985/1912 gedateer 26 Junie 1912 met Kaart Nr 5385/1945 daarby aangeheg en gehou kragtens Transportakte Nr T21659/1969.

- A. ONDERHEWIG aan die voorwaardes waarna verwys word in Transportakte Nr T14905/1950
- B. VERDER ONDERHEWIG aan die voorwaardes, in sover hulle nog van toepassing is soos uiteengesit in Akte van Verdeling gedateer 27 Oktober 1911 en 17 November 1911, gemerk "A" geheg aan Verdelingstransportakte Nr T4985/1912.
- C. VERDER ONDERHEWIG aan die volgende voorwaarde vervat in Transportakte Nr T2617/1947, naamlik:

"Die Transportnemer en sy Opvolgers in Titel van die eiendom wat hiermee getranspoteer word die reg van suiping sal hê in die Norga Rivier soos aangemerkt op Kaart nr. 5381/45 van Gedeelte 44 ('n Gedeelte van Lot D) van die plaas Gwayang hierdie dag getranspoteer aan Petrus Willem Barnard Nr 2613, met reg van toegang vanaf die Nasionale Pad en uitgang."

- D.

WESHALWE die komparant afstand doen van al die regte en titel wat

ABRAHAM JACOBUS DE SWARDT , Getroud soos vermeld

voorheen op genoemde eiendom gehad het, en gevolglik ook erken het dat hy geheel en al van die besit daarvan onthef en nie meer daartoe geregtig is nie en dat, kragtens hierdie akte, bogenoemde

8 MILE INVESTMENTS 236 (EIENDOMS) BEPERK

Registrasienommer 2004/029922/07

diese Opvolgers in titel of Regverkrygendes, tans en voortaan daartoe geregtig is, ooreenkomstig plaaslike gebruik, behoudens die regte van die Staat en ten slotte erken dit dat die verkoopprijs die bedrag van **R2 800 000,00 (Twee Miljoen Agt Honderd Duisend Rand)** beloop.

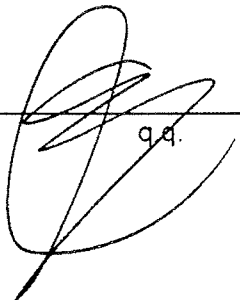
TEN BEWYSE WAARVAN ek, genoemde Registrateur, tesame met die Komparant hierdie Akte onderteken en dit met die ampseël bekragtig het.

ALDUS GEDOEN EN VERLY op die Kantoor van die REGISTRATEUR VAN AKTES te Kaapstad op **4 MAR 2010**

2010 12

In my teenwoordigheid


REGISTRATEUR VAN AKTES


g.g.

B-BBEE (Level 2)

www.boshoffinc.co.za

Pretoria Office Hazelwood Gate Office Park, Ground Floor, 14 Oaktree Avenue, Hazelwood, Pretoria PO Box 14493, Hatfield, 0028 Docex 46, Hatfield Tel: 012 424 7500 Fax: 086 228 6805 Lodgement No: 1608 Magistrate's Pigeonhole: 1488 High Court Pigeonhole: 471A Practice No: F9870 VAT Number: 4290238080 Registration Number: 2006/030918/21	Sandton Office 107 Johan Avenue, Ground Floor, Wierda Court, Wierda Valley, Sandton PO Box 14493, Hatfield, 0028 Docex 86, Sandton Square Tel: 087 809 6460 Fax: 086 567 1846 Lodgement No: 1230 Practice No: F16923 VAT Number: 4820276808 Registration Number: 2015/447980/21	Cape Town Office Suite 302 Buitenkloof Studios, 8 Kloof Street, Gardens, Cape Town, 8001 PO Box 15046, Vlaeberg, 8018 Docex 20, Cape Town Tel: 010 900 3325 Fax: 086 567 1849 Lodgement No: 296 Practice No: Firm7425 VAT Number: 4660276801 Registration Number: 2015/448263/21	Nelspruit Office Blokk K, Zone 2, De Blok, c/o Wilhelm & Ferreira Streets, Nelspruit PO Box 19764, Nelspruit, 1200 Tel: 087 654 2679 Fax: 086 558 1575 Registration Number: 2017/225823/21
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Our Ref/Ons verwysing: Willem Theunissen
Email/epos: willem@boshoffinc.co.za

CONVEYANCER'S CERTIFICATE

IN TERMS OF SECTION 38(1)(n) OF THE GEORGE MUNICIPALITY: LAND USE PLANNING BY-LAW

APPLICATION DETAILS:	
Description of Land Development Application with specific reference to: -	
Remainder of Portion 4 of the Farm Gwayang No 208, in the Municipality and Division of George, Western Cape Province	
Date of Application:	8 August 2018
Applicable Sections: <i>[in terms of Section 15(2) of the Bylaw]</i>	(i) The rezoning of Portion 4 of the Farm Gwayang No 208 from "Agriculture Zone I" to "Subdivisional Area" in terms of Section 15(2)(a) from the Land-Use Planning By-Law for George Municipality, 2015. (ii) The subdivision of Portion 4 of the Farm Gwayang No 208 into 9 Portions (5 x Industrial Zone I portions; 1 x Business Zone VI portion; 1 x Transport Zone II portion; 1x Utility Zone erf & 1 x Agriculture Zone I portion (the Remainder)) in terms of Section 15(2)(d) from the Land-Use Planning By-Law for George Municipality, 2015;



Directors: JJ Boshoff (B. Proc); N Nortje Smalman (LLB); JM Bezuidenhout (B.Proc); KA Lovegrove (LLB); SS Maqungo (BA)(LLB)(LLM); S Ebrahim-Essop (LLB); WJ Theunissen (BComm)(LLB); R Sunkel (B. Proc);

Attorneys: I Theunissen (LLB); B Strachan (LLB); M Grobler (BComm)(LLB); D Janse van Rensburg (LLB)(LLM); T Verster (BA)(LLB); HG Theunissen (LLB); IM du Plessis(BLC)(LLB); MSM Kuit (BA)(LLB)(Hons Pol); MCE Erasmus (BA LAW)(LLB); M Schubert (BProc)(HDip Tax)(MCom); A du Plessis(LLB)(LLM); K Wassenaar(LLB); M Theunissen(LLB); A Reyneke (Bcomm)(LLB)

Associates: JF Davel (B.Iuris) (LLB)

Consultants: LM Maree (BLC)(LLB); J Tromp (BA)(LLB); P Papadopulo (BProc)(MBA)

Bookkeepers: R Dekker; S Boshoff (B. Proc); M van der Merwe; S van Burick

I, the undersigned WILLEM JACOBUS THEUNISSEN LPCM 94028

a duly qualified and admitted Conveyancer,
practicing at:

SUITE 302 BUITENKLOOF STUDIOS, 8 KLOOF STREET, GARDENS, CAPE TOWN AS A
DIRECTOR OF BOSHOF CAPE TOWN INCORPORATED

[Firm name and Address]

do hereby certify as follows:

1. I have perused the following Title Deed/s and conducted a search behind the pivot of the said title deed/s at the Deeds Office, Cape Town:
T 10434/2010[Current Title Deed], T14905/1950 AND T4985/1912

In respect of:

Remainder of Portion 4 of the Farm Gwayang No 208, in the Municipality and Division of George, Western Cape Province

In extent: 11,0433 (Eleven Comma Zero Four Three Three) **hectares**

Held by Deed of Transfer No: T10434/2010

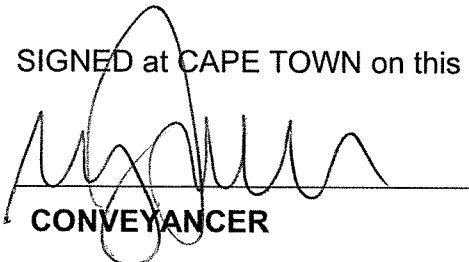
Registered in the Name of:

8 MILE INVESTMENTS 236 (PTY) LTD

Registration / Identity No: 2004/029922/07

2. I have appraised myself with the details of the abovementioned Land Development Application.
3. The abovementioned Title Deed/s contains no conditions restricting the contemplated Land Uses in terms of the abovementioned Land Development Application.

SIGNED at CAPE TOWN on this 4TH day of JUNE 2021



CONVEYANCER

WJ THEUNISSEN

Directors: JJ Boshoff (B. Proc); N Nortje Smalman (LLB); JM Bezuidenhout (B.Proc); KA Lovegrove (LLB); SS Maqungo (BA)(LLB)(LLM); S Ebrahim-Essop (LLB);
WJ Theunissen (BComm)(LLB); R Sunkel (B. Proc);
Attorneys: I Theunissen (LLB); B Strachan (LLB); M Grobler (BComm)(LLB); D Janse van Rensburg (LLB)(LLM); T Verster (BA)(LLB); HG Theunissen (LLB);
IM du Plessis(BLC)(LLB); MSM Kuit (BA)(LLB)(Hons Pol); MCE Erasmus (BA LAW)(LLB); M Schubert (BProc)(HDip Tax)(MCom); A du Plessis(LLB)(LLM);
K Wassenaar(LLB); M Theunissen(LLB); A Reyneke (Bcomm)(LLB)
Associates: JF Davel (B.luris) (LLB)
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Bookkeepers: R Dekker; S Boshoff (B. Proc); M van der Merwe; S van Burick

GEORGE MUNICIPALITY



APPLICATION FORM FOR APPLICATION SUBMITTED IN TERMS OF THE LAND-USE PLANNING BY-LAW FOR GEORGE MUNICIPALITY

NOTE: Please complete this form using BLOCK capitals and ticking the appropriate boxes.

PART A: APPLICANT DETAILS

First name(s)	HENDRIKA MARIA		
Surname	VREKEN		
SACPLAN Reg No. (if applicable)	1101		
Company name (if applicable)	Marike Vreken Town Planners CC		
Postal Address	PO Box 2180		
	Knysna	Postal Code	6570
Email	marike@vreken.co.za		
Tel	044 382 0420	Fax	086-459-2987
		Cell	082-927-5310

PART B: REGISTERED OWNER(S) DETAILS (if different from applicant)

Registered owner	8 MILE INVESTMENTS 236 (PTY) LTD Registration No. 2004/029922/07		
Address			
		Postal code	
E-mail			
Tel		Fax	
		Cell	

PART C: PROPERTY DETAILS (in accordance with Title Deed)

Property Description [Erf / Portion(s) and Farm no(s), allotment area.]	Remainder of Portion 4 of the Farm Gwayang No 208, in the Municipality and Division of George, Western Cape Province.
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Physical Address	The application area is located opposite the entrance to the George Airport. The application area is located on the eastern side of Main Road 347, between the Old National Road to George and the N2 National Road				
GPS Coordinates	22° 23' 0.75" E and 33° 59' 56.45" S		Town/City	George	
Current Zoning	Agriculture Zone I	Extent	11,0433 ha	Are there existing buildings?	N
Current Land Use	Vacant				
Title Deed number & date	T10434/2010		2010/03/04		
Any restrictive conditions prohibiting application?		N	If Yes, list condition number(s).	N/A	
Are the restrictive conditions in favour of a third party(ies)?		N	If Yes, list the party(ies).	N/A	
Is the property encumbered by a bond?		N	If Yes, list Bondholder(s) ?	N/A	
Has the Municipality already decided on the application(s)?		N	If yes, list reference number(s)?		
Any existing unauthorized buildings and/or land use on the subject property(ies)?		N	If yes, is this application to legalize the building / land use?		N
Are there any pending court case / order relating to the subject property(ies)?		N	Are there any land claim(s) registered on the subject property(ies)?		N

PART D: PRE-APPLICATION CONSULTATION

Has there been any pre-application consultation?	Y	If Yes, please complete the information below and attach the minutes. Refer Annexure C			
Official's name	Refer Annexure C	Reference number		Date of consultation	8 Sept 2016 29 Jan 2018

PART E: LAND USE APPLICATIONS IN TERMS OF SECTION 15 OF THE LAND USE PLANNING BY-LAW FOR GEORGE MUNICIPALITY & APPLICATION FEES PAYABLE

***Application fees that are paid to the Municipality are non-refundable and proof of payment of the application fees must accompany the application.**

BANKING DETAILS

Name:	George Municipality
Bank:	ABSA
Branch no.:	632005
Account no.:	01022220981
Type:	Cheque
Swift Code:	ABSAZAJCPE-SORTCODE 632005
VAT Registration Nr:	4630193664
E-MAIL:	ronel@george.org.za
*Payment reference:	GRG.....or Erf nr:

PART F: DETAILS OF PROPOSAL

Brief description of proposed development / intent of application:

See attached motivation report

PART G: ATTACHMENTS & SUPPORTING INFORMATION FOR LAND USE PLANNING APPLICATIONS

Please complete the following checklist and attach all the information relevant to the proposal. Failure to submit all information required will result in the application being deemed incomplete.

Is the following compulsory information attached?

Y	N	Completed application form	Y	N	Pre-application Checklist (where applicable)
Y	N	Power of Attorney / Owner's consent if applicant is not owner	Y	N	Bondholder's consent (Not Applicable)
Y	N	Motivation report / letter		N	Proof of payment of fees (Await Invoice)
Y	N	Full copy of the Title Deed	Y		S.G. noting sheet extract / Erf diagram / General Plan
Y	N	Locality Plan	Y		Site layout plan

Minimum and additional requirements:

Y	N	N/A	Conveyancer's Certificate	Y	N		Land Use Plan / Zoning plan (Refer Fig 17 & 19 in Motivation Report)
Y	N	N/A	Proposed Subdivision Plan (including street names and numbers)	Y			Phasing Plan

		N/A	Consolidation Plan			N/A	Copy of original approval letter (if applicable)
		N/A	Site Development Plan			N/A	Landscaping / Tree Plan
	N		Abutting owner's consent			N/A	Home Owners' Association consent
Y			Copy of Environmental Impact Assessment (EIA) / <u>in process</u> Heritage Impact Assessment (HIA) / Traffic Impact Assessment (TIA) / Traffic Impact Statement (TIS) / Major Hazard Impact Assessment (MHIA) / Environmental Authorisation (EA) / Record of Decision (ROD) – <u>in process</u> <u>(strikethrough irrelevant)</u>	Y	N	N/A	1 : 50 / 1:100 Flood line determination (plan / report)
Y			Services Report or indication of all municipal services / registered servitudes	Y			Required number of documentation copies
Y			Any additional documents or information required as listed in the pre-application consultation form / minutes	Y	N		Other (specify) Geo-Technical Report Geo-Hydrological report Fres water Impact Study Storm water management plan Social Impact Assessment

PART H: AUTHORISATION(S) IN TERMS OF OTHER LEGISLATION

Y		National Heritage Resources Act, 1999 (Act 25 of 1999)				Specific Environmental Management Act(s) (SEMA)
	N	National Environmental Management Act, 1998 (Act 107 of 1998) - <u>in process</u>				(e.g. Environmental Conservation Act, 1989 (Act 73 of 1989), National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004),
Y	N	Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970) <u>in process</u>		Y	N/A	National Environmental Integrated Coastal Management Act, 2008 (Act 24 of 2008), National Environmental Management: Waste Act, 2008 (Act 59 of 2008),
Y	N/A	Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)(SPLUMA)				National Water Act, 1998 (Act 36 of 1998)
Y	N/A	Occupational Health and Safety Act, 1993 (Act 85 of 1993): Major				

		Hazard Installations Regulations				(strikethrough irrelevant)
Y	N/A	Land Use Planning Act, 2014 (Act 3 of 2014) (LUPA)		Y	N/A	Other (specify)
Y	N	If required, has application for EIA / HIA / TIA / TIS / MHIA approval been made? If yes, attach documents / plans / proof of submission etc.				
Y	N	If required, do you want to follow an integrated application procedure in terms of section 44(1) of the Land-Use Planning By-law for George Municipality?				

SECTION I: DECLARATION

I hereby wish to confirm the following :

1. That the information contained in this application form and accompanying documentation is complete and correct.
2. The Municipality has not already decided on the application.
3. I'm aware that it is an offense in terms of section 86(1)(d) to supply particulars, information or answers in an application, knowing it to be false, incorrect or misleading or not believing them to be correct.
4. I am properly authorized to make this application on behalf of the owner and (where applicable) copies of such full relevant Powers of Attorney/Consent are attached hereto.
5. I have been appointed to submit this application on behalf of the owner and it is accepted that correspondence from and notifications by the Municipality in terms of the by-law will be sent only to me as the authorised agent and the owner will regularly consult with the agent in this regard (where applicable).
6. That this submission includes all necessary land use planning applications required to enable the development proposed herein.
7. I confirm that the relevant title deed(s) have been read and that there are no restrictive title deed restrictions, which impact on this application, or alternatively an application for removal/amendment/suspension forms part of this submission.
8. I am aware of the status of the existing bulk services and infrastructure in the subject area and that I am liable for any possible development charges which may be payable as a result of the proposed development.

Applicant's signature:



Date:

8 August 2018

Full name:

Hendrika Maria Vreken

Professional capacity:

Professional Town Planner

SACPLAN Reg. Nr:

1101

FOR OFFICE USE ONLY

Date received:

Received by:

Receipt number:

Date application
complete

**PROPOSED REZONING OF PORTION 4 OF THE FARM
GWAYANG NO 208, DIVISION GEORGE
MINUTES OF THE
PRE-APPLICATION CONSULTATION MEETING HELD AT GEORGE MUNICIPALITY ON
08 SEPTEMBER 2016**

Attendance:

<u>Name</u>	<u>Organisation</u>	<u>Tel No</u>	<u>E-mail</u>
Delia Power (DP)	George Municipality	044-801-9476	Delia@george.org.za
Jeanne Fourie (JF)	George Municipality	044-801-9138	Jeanne@george.org.za
Amor Stoffels (AS)	George Municipality	044-801-9477	Amour@george.org.za
Mawethu Bonga	George Municipality	044-801 9475	Mawethu@george.org.za
Liesl Stalmeester	George Municipality	044-801-9047	Leezl@george.org.za
Tamsin Makan	George Municipality	044-801-9047	Tamsin@george.org.za
Stiaan Carstens	Dept. Environmental Affairs and Development Planning		Stiaan.Carstens@westerncape.gov.za
Francois Naude	Dept. Environmental Affairs and Development Planning	044-805-8604	Francois.Naude@westerncape.gov.za
Danie Swanepoel	Dept. Environmental Affairs and Development Planning	044-805-8604	danie.swanepoel@westerncape.gov.za
Cathy Avierinos	Hilland Associates	044-889-0229	cathy@hilland.co.za
Marika Vreken	MV TRP	044-382-0420	marika@vreken.co.za

Discussion Points:

1. The Proposal

- 1.1. The proposal is to subdivide the application area into three (3) portions (Portion A (filling Station)); Portion B = Business Site and a Remainder.
- 1.2. The proposed and authorised new western bypass road is aligned along the eastern boundary of the application area.

2. Feedback from Authorities

2.1. DEADP:

- 2.1.1. The proposal will require environmental authorisation
- 2.1.2. Need to motivate consistency with the WC PSDF.
- 2.1.3. Need to investigate the cumulative impact of three (3) filling stations in the area.
- 2.1.4. The Environmental Authorisation on the property to the north, has been confirmed and "locked in", but access for this property has to be resolved.
- 2.1.5. The application has to address "Need & Desirability" – is there really a need for a 3rd filling station in this area?

- 2.1.6. Need to investigate the impacts of the proposed filling station on ground water. The proposed new filling station on Portion 4 is near the water course that is earmarked as a CBA and that runs from the existing Airport.
- 2.1.7. Need to obtain comments from Dept. of Minerals & Energy in the NEMA Authorisation process.
- 2.1.8. Need to obtain approval / comments from the Department of Water Affairs and potentially a Water Use License. This will have to be addressed in the NEMA process.
- 2.1.9. Need to consider and accommodation the proclaimed road reserves in the layout – also the proclaimed alignment of the new Western Bypass.
- 2.2. George Municipality:
 - 2.2.1. It might be that the approved land use rights to the north of Portion 4 has lapsed – this must be investigated.
 - 2.2.2. Does not support the proposed business erf. The area is earmarked for Airport support Services, and not retail.
 - 2.2.3. The proposed service station is regarded as being consistent with the Gwayang Local Area Structure Plan. Not the proposed retail use.
 - 2.2.4. A water main runs near the application area, need to investigate the feasibility to connect into this line.
 - 2.2.5. Need to also submit an application to the National Department of Agriculture.
 - 2.2.6. The proposed traffic circle is supported in principle, but has to be approved by the Provincial Roads Authority.



Cape Environmental Assessment Practitioners (Pty) Ltd

Reg. No. 2008/004627/07
VAT No 4720248386

Telephone: (044) 874 0365
Facsimile: (044) 874 0432
Web: www.cape-eaprac.co.za

17 Progress Street, George
PO Box 2070, George 6530

MEETING SUMMARY	Project Name:	GEORGE AIRPORT SUPPORT ZONE – BA process		
	Reference Numbers:	DEA&DP Pre-Application: 16/3/3/6/7/1/D2/19/0194/17		
	Date:	Cape EAPrac: GEO486		
	Time:	Monday 29 January 2018		
	Location:	10:00 to 13:00		
		George Municipality Offices: 5 th Floor, Civil Centre Boardroom, Progress Street entrance, George		
ATTENDEES:	Delia Power	DP	George Municipality: Spatial Planning	
	Clinton Petersen	CP	George Municipality: Spatial Planning (entered late)	
	Malcolm Watters	MW	Provincial Roads	
	Evan Burger	EB	Provincial Roads	
	Francois Naude	FN	DEA&DP: Environmental Management	
	Stiaan Carstens	SC	DEA&DP: Planning	
	Dalene Carstens	DC	DEA&DP: Planning	
	Dr Louis Roodt	LR	University of Stellenbosch: Traffic Engineer	
	Marike Vreken	MV	Vreken Urban Planners	
	Siân Holder	SH	Cape EAPrac	
	Louise-Mari van Zyl	LvZ	Cape EAPrac	
	Flip Joubert	FJ	Proponent: Project Management	
	NON-ATTENDING INVITEES:	Shireen Pullen	DEA&DP: Case Officer	
Ricus Fivas		George Municipality: Roads & Stormwater		
Pamela Jamjam		Department of Minerals & Energy: Licencing & Compliance		
Wisani Maluleke		Department of Minerals & Energy: Licencing & Compliance		
Malcolm Fredericks		DEA&DP: Environmental Management		
MEETING MEMO / NOTES				
PURPOSE OF MEETING as per Agenda: To discuss and resolve key issues of concern related to:				
<ul style="list-style-type: none">• Access / By-pass Road/s;• Spatial planning related to supporting services (to the George Airport);• Proximity of two other filling stations (approved & not yet built) within 500m radius of proposed new Filling Station.• Findings / recommendations of Traffic Impact Assessment (TIA).				
LvZ	Provided intro. as per Agenda & apologies for Dept. of Minerals & Energy.			
SH	Pre-Application environmental assessment underway for another Filling Station (and airport support services) on property opposite airport entrance (Portion 4 of Farm 208 Gwayang). There are two approved Filling Station in close proximity to this new site – one on property directly to north (Steyn) and one within Airport / ACSA site.			
MW &	Provincial Roads is aware of and commented on both existing Filling Station approvals - Steyn – commenced? & ACSA Filling Station – lapsed?			
EB				
MV	Clinton Petersen confirmed that ACSA has a LUPO Approval, extension application underway (lapses 20/06/2018). Access remains a concern.			
FN	Steyn property transferred to new owner and Environmental Authorisation commenced with.			
MW	Previous owner, Steyn, took Provincial Roads to court 2 years ago for our refusal to allow access off the R102.			
FJ	Strategic picture: Western Bypass impacts on traffic flow & airport support services;			

	<ul style="list-style-type: none"> - Spatial planning is dependent on route alignment; - ACSA SDF is outdated – being updated now – as it was based on a scenario where the By-Pass was not part of the planning; - ACSA passenger throughput is increasing 8% on annual average.
LvZ	Other 2 Filling Stations not fully approved – only partial approvals OR have unresolved issues. Only one Filling Station will be approved for the Airport zone, with or without this new Application.
SC	As By-Pass will come someday, it must be considered.
MW	Airport will get access – no private land – airport keeps entrance.
FJ	When will Bypass be implemented?
MW	Within next 5-20 years, depending on funding – will be built in phases.
LR	<ol style="list-style-type: none"> 1) Airport Support Zone allows for expansion of Airport – talks to viability & traffic patterns. 2) ByPass future circulation will effect traffic flow at macro-level.
LvZ	Will the current Application work with this macro-level in mind?
LR	Retail proposal will work. ByPass will not materialize in 10 -15 years. Route 404 will eventually become the main route. In the long-term, with implementation of ByPass, it will have different traffic flow, but becomes easier because one approach falls away. The Steyn Filling Station cannot work.
MW	Steyn will not get access other than via this property (Portion 4 of 208 Gwayang) – and there should not be a parallel access with R404.
DP	What about access north of new site onto the Steyn site?
MV	Access via public road across this property – same applies to quarry property to the south.
DP	No access from ByPass to these properties?
MW	Correct.
SH	2014 Layout for Steyn property shows access via this property, as a servitude parallel to R404.
FN	Access for Steyn has always been intended via neighbour.
FJ	What happened to the alternative for traffic circle at the intersection on Old Airport Road?
MW	This option was turned down (access technically impossible) as access on corner never a good idea and very expensive.
EB	Parallel services road was approved to provide access to Steyn's Filling Station.
LR	Access for traffic to Steyn's Filling Station will not work, because it's for transient traffic, which is for convenience. If they have to drive around – they will most likely just drive past.
FN	The function / nature of current traffic flow / circulation will change when the ByPass comes into effect. This must be described in TIA for new site. The WULA and EIA must be run in parallel to inform Application. And Dept. of Mineral & Energy must give input into EIA.
LvZ	ACSA's Filling Station / Hotel Environmental Authorisation not extended yet?
FN	No. But the National Department (DEA) is the decision-making authority. Must include DEA as stakeholder in your new Application.
LvZ	The extension Application must take new application into consideration.
FJ	Gwayang SDF says specifically that a Filling Station will be supported.
FN	But there is already one – Steyn was originally approved on Appeal.
MW	We objected in 2014.
MV	Question to Delia – Will/ has the ACSA extension application be circulated to the neighbours?
DP	Not as a rule.
MV	The Traffic flows have changed since the previous ACSA approval.
DP	TIA will only be done at later stage with Application.
LR	TIA on planning extension can still indicate a fatal flaw.
SC	If conditions have changed so much, then it should actually be a NEW application, not just an extension.

MV	Is the extension granted?
DP	Should have been approved by now.
LvZ	Traffic @ micro-level on condition: <ul style="list-style-type: none"> - Layout is good; - Access to neighbours is acceptable; - R404 likely to change from Class 2 to 3 in future & will stay a Provincial Road unless the Municipality takes it over.
LR	Airport Road must remain a “healthy” access route – don’t want major speed / conflict on the intersection.
MW	Western Cape: Access Management Guidelines must be applied.
LR	150m ‘throat length’ from an intersection must be complied with in this case. The spacing of the proposed ACSA Filling Station is less. A roundabout on Class 1 or 2 roads is recommended as they create lower conflict (low severity) impact. A roundabout would provide an effective access to the airport and Portion 4 of Farm 208.
MW	We will support a circle at access, in principle.
LR	It will allow for better flow in and out of the circle – no congestion from any side. Peak times have relatively low flow on R404. Majority of traffic is to/from airport as main source. The existing back-up experienced at airport access contributes to ‘external’ problems - with people parking outside entrance to avoid congestion / paying for parking. There is an existing capacity problem – level ‘D’. Ideally you don’t want lower than ‘C’ level. Should the proposed traffic roundabout at the Airport entrance get built, it will improve level to ‘A’ / ‘B’. But exit from airport will remain problematic especially if you have busses / larger trucks using their road. New Application (with Roundabout) will provide for good traffic flow. ACSA has exactly the same traffic, but the existing exit may complicate <u>their</u> traffic flow.
LvZ	What is the existing spacing distance between proposed internal circle to the ACSA Filling Station access to existing Airport entrance?
LR	40m. Ideally should be 150m. Large / long vehicle will have problem turning into and out of the ACSA Filling Station site etc.
EB	40m too short.
MW	If vehicles block the <u>Provincial Road</u> traffic then we get worried i.e. ACSA proposed internal roundabout may create problems.
LvZ	Could the ACSA Filling Station exit via a separate entrance onto Airport Road?
MW	This option was rejected by Provincial Roads.
DP	What is the intention behind ‘Industrial’ zoning of Application?
MV	Warehousing – ‘Industrial’ is zoning type only – with restriction for logistics only.
DP	Is the demand high enough?
MV	Will be developed in phases as Airport expands, the need will increase and type of airport support confirmed.
DP	Must consider tourism activities as well, as we support that in the SDF. Any accommodation opportunities in proposal?
MV	No, as it will then be in conflict with ACSA and Steyn Authorisations, as they both include accommodation / tourism.
DP	Should be tourism orientated – not commercial, but tourism will be supported.
FJ	Want to attract visitors to property - feasibility must include small commercial activities.
DP	That is fine, as long as it is not a ‘Pick-n-Pay’.
SC	Airport support functions must be quantified / defined. Don’t put something there that will not be <u>in-support</u> of airport. Consider an alternative for the circle in the internal road network?

FJ	Happy with that.
FN	Why angle in Filling Station layout?
FJ	Topography. Bottom dam impacts on layout.
MV	Airport support users definition – cargo / freight services. Focus remains this. Applicant will not have objection to conditions that are restricted to <u>airport support</u> .
DP	Must look at urban design / landscaping conditions in the Gwaing SDF.
FJ	Coverage is 50 – 75%, so definitely intend to include landscaping & open space (around watercourse etc.).
DP	Understand that zoning scheme does not have zoning for “warehousing”, perhaps “special overlay” zone could be considered?
SC	Could – BUT restrictive conditions are better. Mostly ‘business’. Specify conditions / uses – send to Delia for final zoning conditions. Also look at Cape Town / OR Tambo airport support landuse.
DP	Is there sufficient Services?
LvZ	Yes, confirmed by Civil & Electrical Engineers.
FN	Check ‘listed activities’ for <u>roads masterplan</u> for ‘public roads’ to neighbouring properties i.e. Kraaibosch Roads Master Plan. Your planning now will inform future layouts of neighbouring properties and surrounding landuses.
EB	There will be a Condition that the access / internal road into your property must be municipal / public road.
FJ	Is there an opportunity for Public Transport function for airport?
DP	Phase 5 of ‘Go-George Bus Service’ is to service peripheral nodes, so yes.
SC	Find out from Go-George what their planning is?
EB	Intersection spacing must be taken into account, along with requirement for lighting at intersection – clarify if CAA will permit intersection lighting.
DP	Remains ‘rural area’, so lighting must be downward.
FN	The mining activity will impact on your activity – perhaps consider a setback to protect yourself from their dust / noise. Must give an implementation timeframe.
SH	Source at mine is estimated to be depleted by +/- 2040.
LR	How will this impact on construction of ByPass over quarry?
EB	ByPass already proclaimed, therefore no landuse within its road reserve.
MW	Will bring our local guys in to confirm that no land use takes place on “our” (Provincial Roads) land.
MV	What is the status of the Airport extension application? Because original approval (ended last year) had a condition / requirement that a TIA should still needs to be done. The Applicant highlighted the need for clarification on status / TIA as it affects the traffic impacts on their property / proposal.
CP	Will get back to you.
MW	Provincial Roads view: No access from Airport Road (R102) for any property. No objection against roundabout at Airport entrance, if it is properly investigated. Design must prevent mobility / road safety issues on R404. Consider options for low level lighting at intersection for pedestrians.
FN	Is the Filling Station the critical component of this new Application?
FJ	Nearest filling stations are: Groot Brak – 16km away, York Street Caltex – 7km away & Blanco Caltex – 7km away. There is a need for a Filling Station near the Airport to service people returning hired vehicles etc. We have developed 400 filling stations and it looks like we can have a feasible facility here. Yes, it’s a priority.
FN	Must say that you have looked at potential impact on / from other filling stations.
DP	We often get requests for diesel depots for large vehicles in rural areas – if you can provide for this need, it will help.
FJ	Our site can accommodate this need. The ACSA Filling Station cannot, because of its site

		constraints – small size and poor accessibility.		
DECISIONS MADE / ITEMS CONFIRMED	<p>1. Other two approved Filling Stations partially approved / have issues: Steyn property only access unviable (servitude parallel to R404, across Portion 4 of Farm 208). ACSA Filling Station only access questionable - spacing distance between existing Airport entrance on R404 & proposed Airport internal roundabout access to their Filling Station site is only 40m – too short for large vehicles and could potentially cause mobility / conjection / safety issues onto R404, which Provincial Roads Dept. will not allow. ACSA's extension application dependent on an outstanding TIA.</p> <p>2. Western By-Pass proclaimed and will be built in phases within next 5 to 20 years: ACSA SDP must be updated to consider macro-level effects of By-Pass on its expansion plans. The 'Airport Support Zone' must consider both the expansion of the Airport & this macro-level traffic flow circulation of the future By-Pass in its TIA. No direct access off By-Pass onto properties & no landuses to be permitted in By-Pass road reserve.</p> <p>3. Airport support functions must be quantified / defined – 'Industrial Zoning' with restrictive conditions for warehousing / cargo & freight services / logistics / small business / small commercial – must align with & not conflict with tourism / accommodation activities already approved on Steyn and ACSA properties. Large commercial activities will not be allowed by Municipality (e.g. supermarkets). Review Cape Town &/ OR Tambo Airport support landuses.</p> <p>4. Longevity of Mine – consider potential dust / noise & traffic impacts of Mine on proposal.</p> <p>5. Landscaping / green spaces must be included in proposal.</p> <p>6. Feasibility of Filling Station as critical priority of proposal - must investigate / consider / describe potential impact on / from other filling stations.</p>			
	FOLLOW-UP ACTION ITEMS			
	#	ACTION ITEMS	RESPONSIBLE PERSON(S)	TARGET DATE
	1	George Airport Support Zone TIA & roundabout design must consider: <ul style="list-style-type: none">- Airport's expansion plans & macro-level traffic flow/circulation from future By-Pass;- Unrestricted mobility on R404 for large vehicles (provision of diesel depot for trucks & access by busses etc.);- Public transport (Go-George Bus Phase 5), sufficient parking & pedestrian thoroughfare;- CAA input regarding lighting (downward / rural) at 'Roundabout' / Airport Intersection.- Access & internal road network MUST be public. Consider Road Master Planning & access to neighbouring properties as this will influence layouts of surrounding landuses.- Large vehicle & traffic impact associated with neighbouring Mine (especially future access through property).	Flip Joubert Louis Roodt Siân Holder Electrical Engineer	As part of EIA
	2	Define Airport support functions as far as possible – informed by review of airport support services / landuses at the Cape Town and OR Tambo Airports.	Marieke Vreken	As part of EIA
	3	<ul style="list-style-type: none">- Dept. of Mineral & Energy must give input in EIA;- EIA and WULA must be parallel processes.	Siân Holder	As part of EIA
4	Confirm status of Airport / ACSA Extension Application, Updated Airport SDP & TIA.	Clinton Petersen Marieke Vreken	ASAP	
5	Must investigate / consider / describe: <ul style="list-style-type: none">- potential impact on / from other filling stations.- potential dust / noise & traffic impacts of Mine on proposal.	Flip Joubert Socio-economic specialist Siân Holder	As part of EIA	



**Western Cape
Government**

Department of Environmental Affairs and Development Planning

Shireen Pullen

Directorate: Development Management, Region 3

Shireen.Pullen@westerncape.gov.za | Tel: 044 814 2021

REFERENCE: 16/3/3/1/D2/19/0024/19
ENQUIRIES: Shireen Pullen
DATE OF ISSUE: 31 January 2022

The Director
8 Mile Investments 236 (Pty) Ltd
PO Box 1163
Reinfield
BENONI
1514

Attention: Dr. G. Terblanche

Tel: (011) 425 6677

Email: witsand@gmail.com

Dear Sir

ENVIRONMENTAL AUTHORISATION

APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 (AS AMENDED ON 7 APRIL 2017): PROPOSED ESTABLISHMENT OF A FILLING STATION, WAREHOUSING AND AIRPORT SUPPORT SERVICES ("GEORGE AIRPORT SUPPORT ZONE") ON PORTION 4 OF FARM GWAYANG NO. 208, GEORGE

1. With reference to the above application, the Department hereby notifies you of its decision to **grant** Environmental Authorisation, attached herewith, together with the reasons for the decision.
2. In terms of Regulation 4 of the Environmental Impact Assessment Regulations, 2014 (as amended), you are instructed to ensure, within 14 days of the date of the Environmental Authorisation, that all registered interested and affected parties ("I&APs") are provided with access to and reasons for the decision, and that all registered I&APs are notified of their right to appeal.
3. Your attention is drawn to Chapter 2 of the Appeal Regulations, 2014 (as amended), which prescribes the appeal procedure to be followed. This procedure is summarized in the attached Environmental Authorisation.

Your interest in the future of our environment is appreciated.

Yours faithfully

Gavin Benjamin

Digitally signed by Gavin Benjamin
Date: 2022.01.31 10:18:50 +02'00'

MR. GAVIN BENJAMIN
DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 3)

DATE OF DECISION: 31 JANUARY 2022

Ms. Delia Power

George Municipality

dpower@george.gov.za

Ms. Belinda Clarke

CEN Environmental

bclarke@telkom.net

Mr. Mike. Cohen

CEN Environmental

steembok@isat.co.za



REFERENCE: 16/3/3/1/D2/19/0024/19
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DECISION

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") and the Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended 7 April 2017), the Department herewith refuses Environmental Authorisation for the preferred alternative applied for by the applicant, but **grants Environmental Authorisation** to the applicant to undertake the listed activities specified in section B below with respect to the alternative described and illustrated in the amended Site Development Plan 2, dated 2 August 2021, which was submitted after the Final Basic Assessment Report was received.

The authorised alternative involves a change of land use from Agriculture I to Subdivisional Area, and subsequent subdivision into 13 erven to accommodate the following land uses:

- 5 x Industrial Zone I portions;
- 1 x Business Zone VI portion;
- 1 x Transport Zone II portion;
- 3 x Open Space Zone II portions &
- 1 x Agriculture Zone I portion (the Remainder));

The proposal also includes the establishment of a Transport Zone II erf to provide for an internal road network to the development, by means of an access and egress point off the R404. The alignment of this access route follows the same alignment of the approved roads master plan which will ensure equitable municipal

services and vehicular access to farm portions RE/60/208 (131/208 & 130/208 & 132/208), 4/208 and 139/208.

This EA will be implemented in accordance with the amended Site Development Plan attached to this EA as Annexure 2.

A. DETAILS OF THE APPLICANT

The Director
8 Mile Investments 236 (Pty) Ltd
% Dr. G. Terblanche
PO Box 1163
Reinfield
BENONI
1514

Tel: (011) 425 6677
Email: witsand@gmail.com

The abovementioned applicant is the holder of this environmental authorisation and is hereinafter referred to as "**the holder**".

B. LIST OF ACTIVITIES REFUSED

Listed Activities	Activity/Project Description
<p>Listing Notice 1 of 4 December 2014 (as amended on 7 April 2017)</p> <p>Activity Number 12 Activity Description</p> <p>The development of—</p> <ul style="list-style-type: none">(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or(ii) infrastructure or structures with a physical footprint of 100 square metres or more; <p>where such development occurs—</p> <ul style="list-style-type: none">(a) within a watercourse;(b) in front of a development setback; or(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; — <p>excluding—</p> <ul style="list-style-type: none">(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;(dd) where such development occurs within an urban area;	<p>The development will result in the construction of structures of more than 100m² within 32 meters of the watercourse on site.</p>

<p>(ee) where such development occurs within existing roads, road reserves or railway line reserves; or</p> <p>(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</p>	
<p>Activity Number 14</p> <p>Activity Description:</p> <p>The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.</p>	<p>The development is for a filling station and more than 80 cubic meters of fuel and diesel will be stored for sale on site.</p>
<p>Activity Number: 19</p> <p>Activity Description:</p> <p>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving—</p> <ul style="list-style-type: none"> (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies. 	<p>The development will result in infilling or excavation of 10 cubic meters of soil from a watercourse.</p>
<p>Activity Number: 27</p> <p>Activity Description:</p> <p>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—</p> <ul style="list-style-type: none"> i) the undertaking of a linear activity; or ii) maintenance purposes undertaken in accordance with a maintenance management plan. 	<p>More than 1 hectare of indigenous vegetation will be removed to establish the filling station and warehousing on the proposed site.</p>
<p>Activity Number: 28</p> <p>Activity Description:</p> <p>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game</p>	<p>The site is located outside the urban area of George and is currently zone Agriculture 1 and is used for</p>

<p>farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development:</p> <ul style="list-style-type: none"> (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes. 	<p>grazing. The proposal will result in the transformation of more than 1 hectare for retail and industrial purposes.</p>
<p>Listing Notice 3 of 4 December 2014 (as amended on 7 April 2017)</p> <p>Activity Number: 4 Activity Description:</p> <p>The development of a road wider than 4 metres with a reserve less than 13,5 metres</p> <p>i) Western Cape</p> <ul style="list-style-type: none"> i. Areas zoned for use as public open space or equivalent zoning; ii. Areas outside urban areas; <ul style="list-style-type: none"> (aa) Areas containing indigenous vegetation; (bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or iii. Inside urban areas: <ul style="list-style-type: none"> (aa) Areas zoned for conservation use; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority. <p>(iii)</p>	<p>The access roads will exceed the thresholds stipulated in this listed activity.</p>
<p>Activity Number: 12 Activity Description:</p> <p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>i) Western Cape</p> <ul style="list-style-type: none"> i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; 	<p>More than 300m² of endangered vegetation will be removed to establish the filling station and warehousing on the site.</p>

<ul style="list-style-type: none"> iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or v. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister. 	
<p>Activity Number: 14</p> <p>Activity Description:</p> <p>The development of—</p> <ul style="list-style-type: none"> (i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or (ii) infrastructure or structures with a physical footprint of 10 square metres or more; <p>where such development occurs—</p> <ul style="list-style-type: none"> (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; <p>excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p> <p>i) Western Cape</p> <ul style="list-style-type: none"> i. Outside urban areas: <ul style="list-style-type: none"> (aa) A protected area identified in terms of NEMPAA, excluding conservancies; (bb) National Protected Area Expansion Strategy Focus areas; (cc) World Heritage Sites; (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; (ee) Sites or areas listed in terms of an international convention; (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) Core areas in biosphere reserves; or (hh) Areas on the estuary side of the development setback line or in an estuarine functional zone 	<p>The development will result in the construction of infrastructure of more than 10 square metres within 32 meters of a watercourse on site.</p>

where no such setback line has been determined.	
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The abovementioned list is hereinafter referred to as “**the listed activities**”.

Activity 30 of Listing Notice 1 was also applied for, but it was confirmed with the EAP that it is not applicable to the proposal as no processes were required in terms of section 53(1) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).

C. SITE DESCRIPTION AND LOCATION

The site comprises mainly of remnants garden route granite fynbos vegetation, as well as a small and large watercourse that mainly drains to the south eastern part of the site. The proposed site is located on portion 4 of Farm Gwayang No. 208, George, which is situated east of and opposite to the existing entrance to the George Airport, directly off the R404, and south of the R102.

The abovementioned listed activities are proposed at the following site co-ordinates:

Co-ordinates:

Longitude: 33° 59' 53.21" South

Latitude: 22° 23' 06.54" East

SG21 Digit Code:

02700000000020800004

Refer to Annexure 1: Locality Plan.

The above is hereinafter referred to as “**the site**”.

D. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Environmental Assessment Practitioner:

CEN Environmental

% Ms. Belinda Clarke/ Mr. Mike Cohen

36 River Road

Walmer

PORT ELIZABETH

6070

Tel: (041) 581 2983

Fax: bclarke@telkomsa.net/steenbok@aerosat.co.za

E. CONDITIONS OF AUTHORISATION

Scope and Validity Period of authorisation

1. This Environmental Authorisation is granted for the period from date of issue until **31 January 2042**, the date on which all the listed activities, including post construction rehabilitation and monitoring requirements and operation, will be deemed to be concluded at the site.

Further to the above, the Environmental Authorisation is subject to the following:

- 1.1. The non-operational component i.e., installation of services and top structures but excluding the construction of the filling station is subject to the following:
 - (a) The holder must start with the physical implementation and exceed the threshold of all the authorised listed activities on the site by 31 January 2027; and

- (b) Rehabilitation and monitoring must be finalised at the site within a period of 3-months from the date the construction activities (construction phase) are concluded; but by no later than 31 October 2031.
- 1.2. The construction of the facility for the storage and handling of dangerous goods must commence by the 31 January 2027 and conclude within five (5) years.
 - 1.3. The operational aspects of this Environmental Authorisation are granted until 31 January 2042, during which period all operational aspects, rehabilitation and monitoring requirements as well as the final environmental auditing and reporting must be finalised.
 - 1.4. Should the holder of the EA wish to continue with the operational aspects beyond 31 January 2042, an application for amendment must be submitted prior to the EA lapsing on 31 January 2042.

Failing which, this Environmental Authorisation shall lapse, unless the environmental authorisation is amended in accordance with the relevant process contemplated in the Environmental Impact Assessment Regulations promulgated under the National Environmental Management Act, 1998 (Act no. 107 of 1998).

2. The Holder is authorised to undertake the listed activities specified in Section B above in accordance with the Preferred Alternative described in the FBAR received by this Department on the site as described in Section C above in accordance with the development footprint depicted in Annexure 2 of this Environmental Authorisation.
3. The holder is authorised to undertake the listed activities specified in Section B above in accordance with and restricted to the authorised alternative as described and illustrated in the amended Site Development Plan 2, dated 2 August 2021. The holder is herein authorised to undertake the following alternative that includes the listed activity, as it relates to the development and the development footprint area and entails the change of land use from Agriculture I to Subdivisional Area, and subsequent subdivision into 13 erven to accommodate the following land uses:

The proposed development entails the change of land use from Agriculture I to Subdivisional Area, and subsequent subdivision into 13 erven to accommodate the following land uses:

- 5 x Industrial Zone I portions;
- 1 x Business Zone VI portion;
- 1 x Transport Zone II portion;
- 3 x Open Space Zone II portions &
- 1 x Agriculture Zone I portion (the Remainder));

The proposal also includes the establishment of a Transport Zone II erf to provide for an internal road network to the development, by means of an access and egress point off the R404. The alignment of this access route follows the same alignment of the approved roads master plan which will ensure equitable municipal services and vehicular access to farm portions RE/60/208 (131/208 & 130/208 & 132/208), 4/208 and 139/208.

This EA will be implemented in accordance with the amended Site Development Plan attached to this EA as Annexure 2.

4. This Environmental Authorisation may only be implemented in accordance with an approved Environmental Management Programme ("EMPr").
5. The Holder shall be responsible for ensuring compliance with the conditions by any person acting on his/her behalf, including an agent, sub-contractor, employee or any person rendering a service to the Holder.

6. Any changes to, or deviations from the scope of the alternative described in section B above must be accepted or approved, in writing, by the Competent Authority, before such changes or deviations may be implemented. In assessing whether to grant such acceptance/approval or not, the Competent Authority may request information in order to evaluate the significance and impacts of such changes or deviations, and it may be necessary for the Holder to apply for further authorisation in terms of the applicable legislation.

Notification and administration of appeal

7. The Holder must in writing, within 14 (fourteen) calendar days of the date of this decision—
- 7.1. notify all registered Interested and Affected Parties ("I&APs") of –
 - (a) the decision reached on the application;
 - (b) the reasons for the decision as included in Annexure 3;
 - (c) the date of the decision; and
 - (d) the date when the decision was issued.
 - 7.2. draw the attention of all registered I&APs to the fact that an appeal may be lodged against the decision in terms of the National Appeal Regulations, 2014 (as amended) detailed in Section G below;
 - 7.3. draw the attention of all registered I&APs to the manner in which they may access the decision;
 - 7.4. provide the registered I&APs with the:
 - (a) name of the Holder (entity) of this Environmental Authorisation,
 - (b) name of the responsible person for this Environmental Authorisation,
 - (c) postal address of the Holder,
 - (d) telephonic and fax details of the Holder,
 - (e) e-mail address, if any, of the Holder,
 - (f) contact details (postal and/or physical address, contact number, facsimile and e-mail address) of the decision-maker and all registered I&APs in the event that an appeal is lodged in terms of the 2014 National Appeals Regulations (as amended).
 - 7.5. The listed activities, including site preparation, must not commence within 20 (twenty) calendar days from the date the applicant notified the registered I&APs of this decision.
 - 7.6. In the event that an appeal is lodged with the Appeal Authority, the effect of this Environmental Authorisation is suspended until the appeal is decided i.e. the listed activities, including site preparation, must not commence until the appeal is decided.

Written notice to the Competent Authority

8. Seven calendar days' notice, in writing, must be given to the Competent Authority before commencement of any activities.
- 8.1. The notice must make clear reference to the site details and EIA Reference number given above.
 - 8.2. The notice must also include proof of compliance with the following conditions described herein:
Conditions: 7, 8, 10, 12, 22, 24 and 26.
9. Seven calendar days' notice, in writing, must be given to the Competent Authority on completion of the construction activities.

Management of activity

10. The Environmental Management Programme ("EMPr") submitted as part of the application for Environmental Authorisation must be amended and submitted for approval, subject to the following requirements:
- 10.1. The EMPr must be amended to incorporate the following —

- (a) That Environmental Control Officer (ECO) compliance reports must be submitted monthly to this Directorate.
- (b) All the conditions contained in this Environmental Authorisation;
- (c) A detailed Site Development Plan for the filling station, which also depicts:
 - new access road that is hereby approved as access to the proposed development;
 - tank installations and auxiliary infrastructure for the handling of the dangerous goods;
 - a site-specific stormwater management / drainage system and separation and or treatment devices;
 - monitoring points including boreholes;
 - buffers/corridors around the watercourses
- (d) Clearly list the impact management outcomes and impact management actions for the proposed development;
- (e) An indication of the persons who will be responsible for the implementation of the impact management actions.
- (f) Incorporate an Operational Phase Environmental Management Plan that will deal with the operational aspects including the filling station that must include:
 - The implementation plan with clear impact management outcomes;
 - An indication of the persons who will be responsible for the implementation of the impact management actions.
 - All the conditions and monitoring aspects associated with the groundwater monitoring activities and requirements of the Fuel Retailers Association;
 - All the mitigation measures as described in the Geotechnical Impact Assessment that deals with the filling station and the design measures that were recommended;
 - Emergency procedures and actions to be undertaken for emergency spills or malfunctioning of tanks.
- (g) Incorporate all the conditions contained in this Environmental Authorisation; The section dealing with the management and demarcation of the No-Go area's (including the open space areas) must clearly state how the areas will be demarcated, prior to any earthworks / commencement of construction;
- (h) Include a list of wetland species to be used in re-vegetating the wetland areas;
- (i) Incorporate an alien invasive vegetation clearing plan;
- (j) Incorporate the stormwater management measures as included in the stormwater management plan submitted along with the FBAR plan; and
- (k) Groundwater monitoring measures and intervals;
- (l) Environmental Control Officer ("ECO") compliance reports must be submitted monthly to this Department's Regional Office for attention the Directorate Development Management (Region 3).
- (m) Emergency procedures and actions to be undertaken for emergency spills or malfunctioning of underground fuel storage tanks.

10.2. The amended EMPr must be submitted to the Competent Authority and be approved, prior to construction activities commencing on the site.

Note: The revised EMPr should be submitted to the Competent Authority at least 90-days, prior to the construction activities commencing on site to ensure the competent authority is able to process / review the revised EMPr, prior to the intended date of commencement.

11. The EMPr must be included in all contract documentation for all phases of implementation.

Monitoring

12. The Holder must appoint a suitably experienced Environmental Control Officer ("ECO"), for the duration of the construction and rehabilitation phases of implementation contained herein.

13. The ECO must–

- 13.1. be appointed prior to commencement of any works (i.e., removal and movement of soil and / or rubble or construction activities commencing;
- 13.2. ensure compliance with the EMPr and the conditions contained herein;
- 13.3. keep record of all activities on the site; problems identified; transgressions noted and a task schedule of tasks undertaken by the ECO;
- 13.4. remain employed until all development activities are concluded, and the post construction rehabilitation and monitoring requirements are finalised.

14. A monitoring and implementation programme for the filling station must be developed and incorporated into the EMPr which must include the following:

- (a) the development of the facility and infrastructure for the storage and handling of a dangerous good (i.e., construction of the filling station) and must detail the requirements of the fuel containment area, forecourt area, the installation of the underground storage tanks and pipes.
- (b) Leak detection and monitoring thereof.
- (c) The location of the monitoring boreholes.
- (d) Detail the Recordkeeping and Reporting protocol.

15. A monitoring and implementation programme for the treatment of sewage and disposal of effluent must be developed and incorporated into the EMPr which must include the following:

- a) The sampling frequency of groundwater to detect contamination if possible.
- b) Location of sampling areas.
- c) Standards that water samples are measured against.
- d) Detail the Recordkeeping and Reporting protocol.

16. A copy of the Environmental Authorisation, EMPr, any independent assessments of financial provision for rehabilitation and environmental liability, closure plans, audit reports and compliance monitoring reports must be kept at the site of the authorised activities and be made available to anyone on request, and where the Holder has website, such documents must be made available on such publicly accessible website.

17. Access to the site (referred to in Section C) must be granted, and the environmental reports mentioned above must be produced, to any authorised official representing the Competent Authority who requests to see it for the purposes of assessing and/or monitoring compliance with the conditions contained herein.

Auditing

18. The Holder must, for the period during which the environmental authorisation and EMPr remain valid ensure the compliance with the conditions of the environmental authorisation and the EMPr, is audited.

19. The frequency of auditing of compliance with the conditions of the environmental authorisation and of compliance with the EMPr, must adhere to the following programme:

- 19.1. During the period which the activities have been commenced with on site until the construction of the internal service infrastructure (has been completed on site, the Holder must undertake annual environmental audit(s) and submit the Environmental Audit Report(s) to the Competent Authority.

*A final Environmental Audit Report must be submitted to the Competent Authority within **three (3)** months of completion of the construction of internal services and the post construction rehabilitation and monitoring requirements thereof.*

- 19.2. During the period the development of the facility or infrastructure for the storage and handling of a dangerous good (i.e., construction of the filling station) is undertaken, the Holder must ensure that environmental audit(s) are performed annually and submit these Environmental Audit Report(s) to the Competent Authority.

*A final Environmental Audit Report must be submitted to the Competent Authority within **three (3)** months of completion of the filling station component of the development and the post construction rehabilitation and monitoring requirements thereof, but by no later than 31 October 2031.*

During related operation of the facility or infrastructure for the storage and handling of a dangerous good at the filling station, the frequency of the auditing of compliance with the conditions of the environmental authorisation and of compliance with the EMPr **may not exceed intervals of 5-years.**

20. The Environmental Audit Report(s), must –

- 20.1. be prepared and submitted to the Competent Authority, by an independent person with the relevant environmental auditing expertise. Such person may not be the ECO or EAP who conducted the EIA process.
- 20.2. provide verifiable findings, in a structured and systematic manner, on–
- (a) the level of compliance with the conditions of the environmental authorisation and the EMPr and whether this is sufficient or not; and
 - (b) the ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity.
- 20.3. identify and assess any new impacts and risks as a result of undertaking the activity;
- 20.4. evaluate the effectiveness of the EMPr;
- 20.5. identify shortcomings in the EMPr;
- 20.6. identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr;
- 20.7. indicate the date on which the construction work was commenced with and completed or in the case where the development is incomplete, the progress of the development and rehabilitation;
- 20.8. indicate the date on which the operational phase was commenced with and the progress of the rehabilitation;

- 20.9. include a photographic record of the site applicable to the audit; and
- 20.10. be informed by the ECO reports.
21. The Holder must, within 7 calendar days of the submission of the audit report to the Competent Authority, notify all potential and registered I&APs of the submission and make the report available to anyone on request and on a publicly accessible website (if applicable).

Specific Conditions

22. The no-go areas must be clearly demarcated with orange snow-netting/mesh so that construction workers limit their impact to approved areas only.
23. No stormwater may be discharged from the development directly into the nearby watercourse.
24. A buffer of approximately 20m for the larger watercourse and 10m for the smaller watercourse must be maintained to accommodate stormwater flow within the site. These buffers must be clearly depicted in the amended site development plan to be submitted to this Directorate with the amended EMP.
25. The watercourses must be shaped as open swales that are planted with wetland vegetation such as *Juncus effusus*, *Carex gloerabilis*, *C. clavata*, *Isolepis prolifera*, *Pycnus polystachyos*, *Zantedeschia aethiopica* within the wetter bed together with buffalo grass *Stenotaphrum secundatum* along the banks.
26. A search and rescue operation for indigenous plants must be done prior to commencement of construction activities.
27. Active alien invasive plant control measures must be implemented to prevent the invasion of exotic and alien invasive vegetation within the disturbed areas (including culvert areas).
28. An integrated waste management approach, which is based on waste minimisation and incorporates reduction, recycling, re-use and disposal, where appropriate, must be employed. Any solid waste generated on the development site must be disposed of at a landfill licensed in terms of the applicable legislation.
29. Should any heritage remains be exposed during excavations or any other actions on the site, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape. Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from Heritage Western Cape. Heritage remains may only be disturbed by a suitably qualified heritage specialist working under a directive from the relevant Heritage Resources Authority.

Heritage remains include: meteorites, archaeological and/or paleontological remains (including fossil shells and trace fossils); coins; indigenous and/or colonial ceramics; any articles of value or antiquity; marine shell heaps; stone artefacts and bone remains; structures and other built features with heritage significance; rock art and rock engravings; shipwrecks; and/or graves or unmarked human burials including grave goods and/or associated burial material.

F. GENERAL MATTERS

1. Notwithstanding this Environmental Authorisation, the Holder must comply with any other statutory requirements that may be applicable when undertaking the listed activities.

Amendment of Environmental Authorisation and EMPr

2. If the Holder does not start with all listed activities and exceed the threshold of each listed activity within the period referred to in Section E, this Environmental Authorisation shall lapse for that activity, and a new application for Environmental Authorisation must be submitted to the relevant Competent Authority.

If the Holder wishes to extend a validity period specified in the Environmental Authorisation, an application for amendment in this regard must be made to the relevant Competent Authority, prior to the expiry date of such a period.

Note:

- (a) Failure to lodge an application for amendment prior to the expiry of the validity period of the Environmental Authorisation will result in the lapsing of the Environmental Authorisation.
 - (b) It is an offence in terms of Section 49A(1)(a) of NEMA for a person to commence with a listed activity if the competent authority has not granted an Environmental Authorisation for the undertaking of the activity.
3. The Holder is required to notify the Competent Authority where any detail with respect to the Environmental Authorisation must be amended, added, substituted, corrected, removed or updated.

In assessing whether to amend or correct the EA, the Competent Authority may request information to evaluate the significance and impacts of such changes or deviations, and it may be necessary for the Holder to apply for further authorisation in terms of the applicable legislation.

The onus is on the Holder to verify whether such changes to the environmental authorisation must be approved in writing by the relevant competent authority prior to the implementation thereof.

Note: An environmental authorisation may be amended or replaced without following a procedural requirement contained in the Regulations if the purpose is to correct an error and the correction does not change the rights and duties of any person materially

4. The manner and frequency for updating the EMPr is as follows:
 - (a) Any further amendments to the EMPr, other than those mentioned above, must be approved in writing by the relevant competent authority.
 - (b) An application for amendment to the EMPr must be submitted to the Competent Authority if any amendments are to be made to the impact management outcomes of the EMPr. Such amendment(s) may only be implemented once the amended EMPr has been approved by the competent authority.

The onus is however on the Holder to confirm the legislative process requirements for the above scenarios at that time.

5. Where an amendment to the impact management outcomes of an EMPr is required before an environmental audit is required in terms of the environmental authorisation, an EMPr may be amended on application by the Holder of the environmental authorisation.

Compliance with Environmental Authorisation and EMPr

6. Non-compliance with a condition of this environmental authorisation or EMPr is an offence in terms of Section 49A(1)(c) of the National Environmental Management Act, 1998 (Act no. 107 of 1998, as amended).
7. This Environmental Authorisation is granted for a set period from date of issue, during which period all the listed activities must be commenced with and concluded, including the post-construction

rehabilitation; monitoring requirements and environmental auditing requirements which must be concluded.

The validity period and conditions of the environmental authorisation has been structured to promote the effective administration of the environmental authorisation and guidance has been provided to ensure the compliance thereof within the validity period, for example:

- ❖ Failure to submit the revised EMPr to the Competent Authority at least 90-days prior to the construction activities commencing on site, may result in the competent authority not being able to process / review the revised EMPr prior to the intended date of commencement.
 - ❖ Failure to complete the post construction rehabilitation and monitoring requirements at least six months prior to expiry of the validity period of an environmental authorisation may result in the Holder not being able to comply with the environmental auditing requirements in time.
 - ❖ Failure to complete the auditing requirements at least three months prior to expiry of the validity period of the environmental authorisation may result in the Holder not being able to comply with all the environmental auditing and reporting requirements and may result in the competent authority not being able to process the audit timeously.
8. This Environmental Authorisation is subject to compliance with all the peremptory conditions (i.e. **7, 8, 10, 12, 22, 24 and 26**). Failure to comply with all the peremptory conditions prior to the physical implementation of the activities (including site preparation) will render the entire EA null and void. Such physical activities shall be regarded to fall outside the scope of the Environmental Authorisation and shall be viewed as an offence in terms of Section 49A(1)(a) of NEMA.
9. In the event that the Environmental Authorisation should lapse, it is an offence in terms of Section 49A(1)(a) of NEMA for a person to commence with a listed activity, unless the competent authority has granted an Environmental Authorisation for the undertaking of the activity.
10. Offences in terms of the NEMA and the Environmental Impact Assessment Regulations, 2014, will render the offender liable for criminal prosecution.

G. APPEALS

1. An appellant (if the holder of the decision) must, within 20 (twenty) calendar days from the date the notification of the decision was sent to the holder by the Competent Authority –
 - 1.1. Submit an appeal in accordance with Regulation 4 of the National Appeal Regulations 2014 (as amended) to the Appeal Administrator; and
 - 1.2. Submit a copy of the appeal to any registered I&APs, any Organ of State with interest in the matter and the decision-maker i.e. the Competent Authority that issued the decision.
2. An appellant (if NOT the holder of the decision) must, within 20 (twenty) calendar days from the date the holder of the decision sent notification of the decision to the registered I&APs–
 - 2.1. Submit an appeal in accordance with Regulation 4 of the National Appeal Regulations 2014 (as amended) to the Appeal Administrator; and
 - 2.2 Submit a copy of the appeal to the holder of the decision, any registered I&AP, any Organ of State with interest in the matter and the decision-maker i.e. the Competent Authority that issued the decision.
3. The holder of the decision (if not the appellant), the decision-maker that issued the decision, the registered I&AP and the Organ of State must submit their responding statements, if any, to the appeal authority and the appellant within 20 (twenty) calendar days from the date of receipt of the appeal submission.

4. The appeal and the responding statement must be submitted to the Appeal Administrator at the address listed below:

By post: Western Cape Ministry of Local Government, Environmental Affairs and Development Planning
Private Bag X9186
CAPE TOWN
8000

By facsimile: (021) 483 4174; or

By hand: Appeal Administrator
Attention: Mr Marius Venter (Tel: 021 483 3721)
Room 809
8th Floor Utilitas Building, 1 Dorp Street, Cape Town, 8001

Note: For purposes of electronic database management, you are also requested to submit electronic copies (Microsoft Word format) of the appeal, responding statement and any supporting documents to the Appeal Authority to the address listed above and/ or via e-mail to DEADP.Appeals@westerncape.gov.za.

5. A prescribed appeal form as well as assistance regarding the appeal processes is obtainable from the Appeal Administrator at: Tel. (021) 483 3721, E-mail DEADP.Appeals@westerncape.gov.za or URL <http://www.westerncape.gov.za/eadp>.

H. DISCLAIMER

The Western Cape Government, the Local Authority, committees or any other public authority or organisation appointed in terms of the conditions of this Environmental Authorisation shall not be responsible for any damages or losses suffered by the Holder, developer or his/her successor in any instance where construction or operation subsequent to construction is temporarily or permanently stopped for reasons of non-compliance with the conditions as set out herein or any other subsequent document or legal action emanating from this decision.

Your interest in the future of our environment is appreciated.

Yours faithfully

Gavin Benjamin Digitally signed by Gavin Benjamin
Date: 2022.01.31 10:19:19 +02'00'

MR. GAVIN BENJAMIN
DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 3)

DATE OF DECISION: **31 JANUARY 2022**

CC:

Ms. Delia Power

George Municipality

dpower@george.gov.za

Ms. Belinda Clarke

CEN Environmental

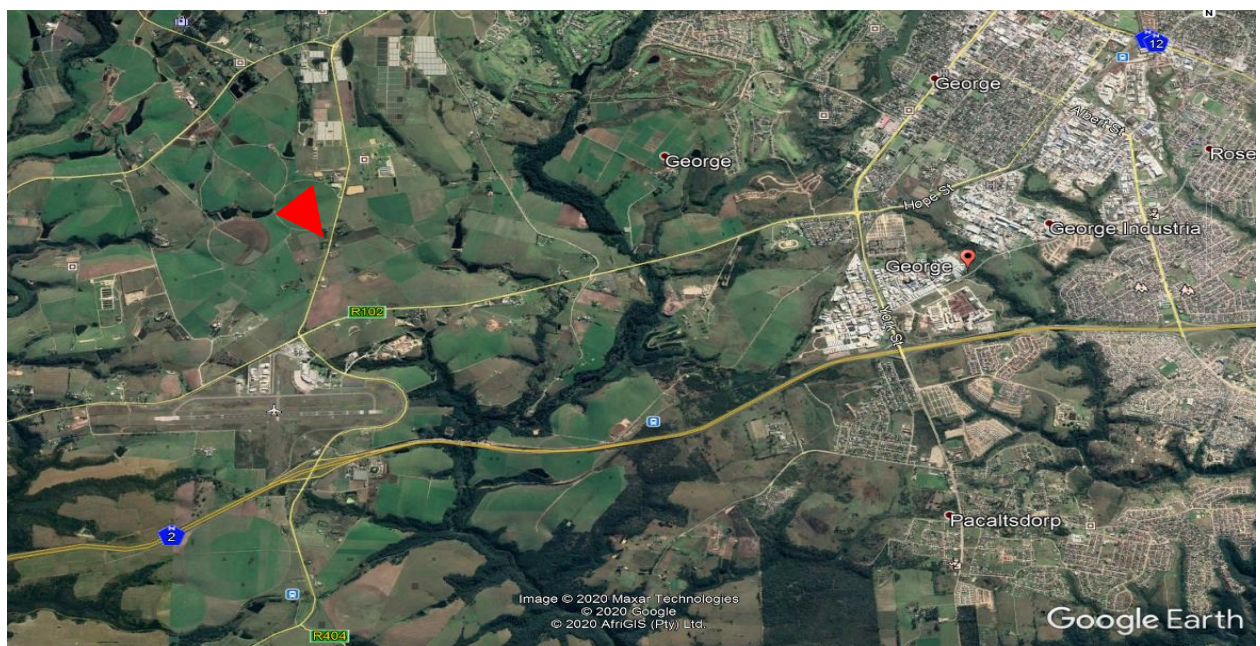
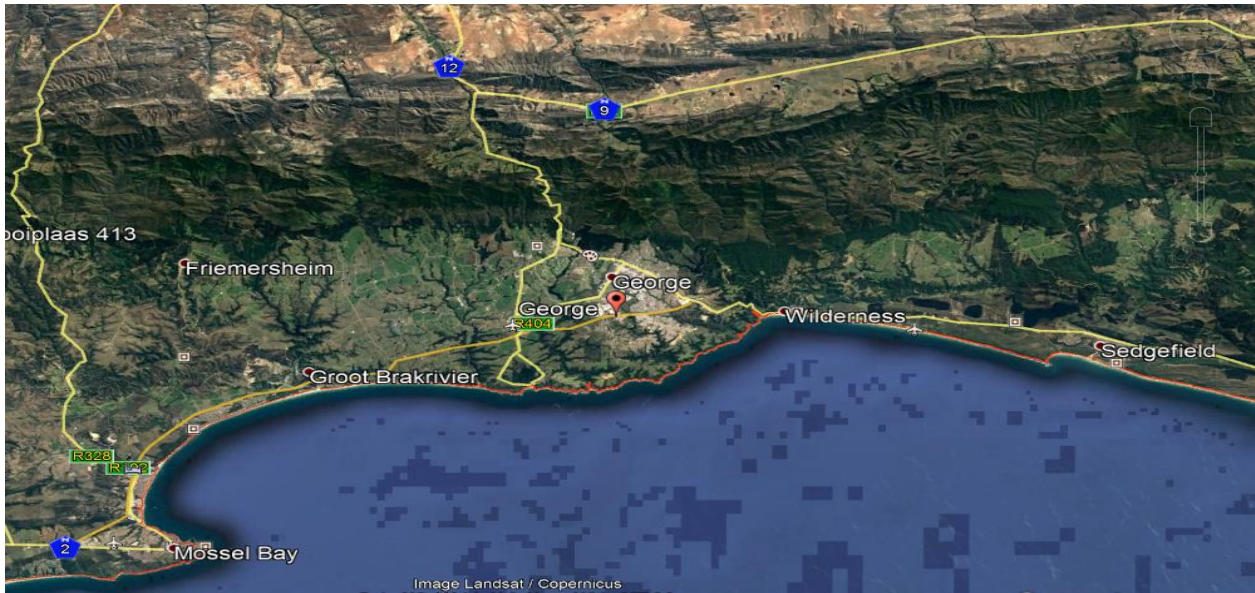
bclarke@telkom.net

Mr. Mike. Cohen

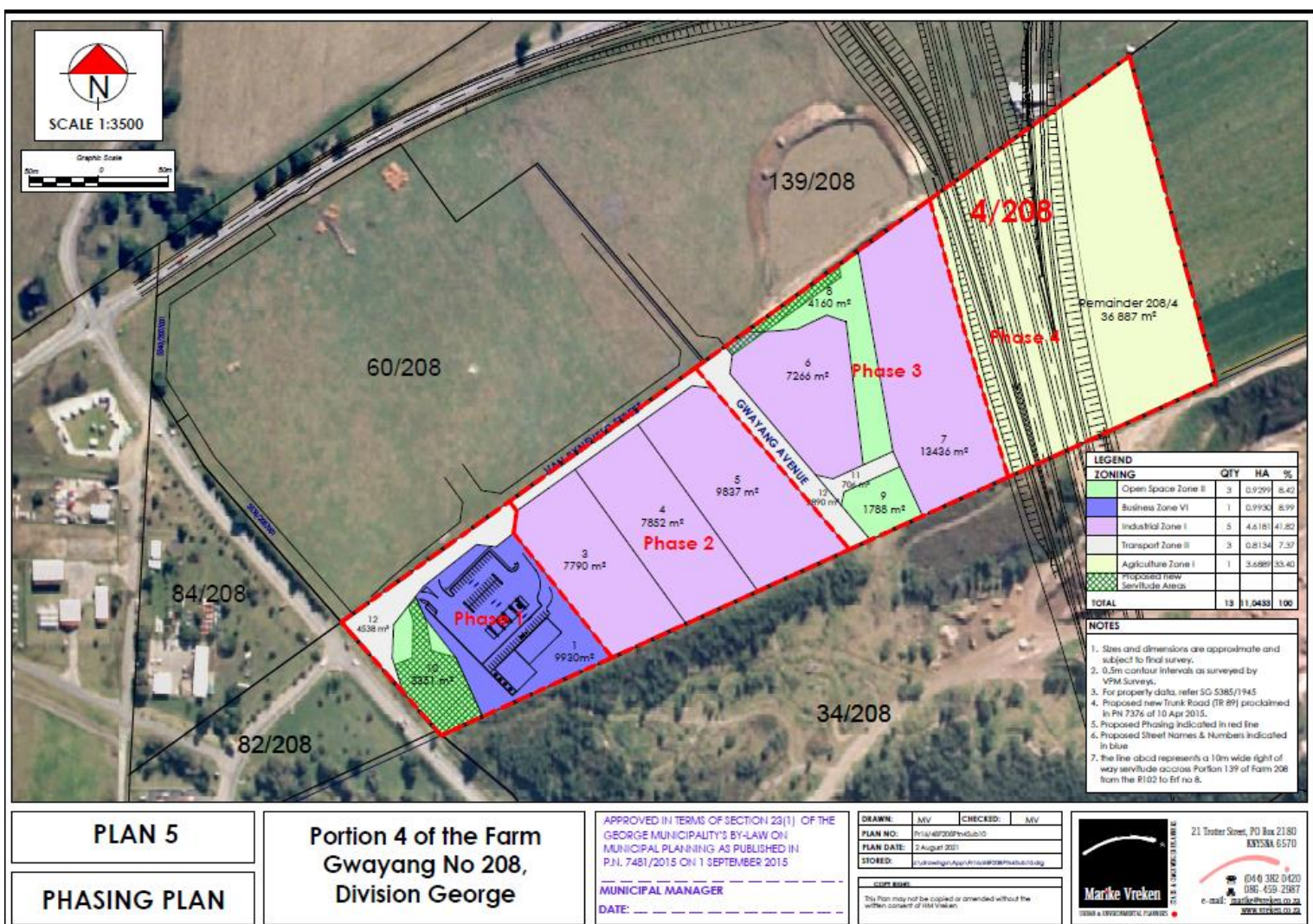
CEN Environmental

steenbok@isat.co.za

ANNEXURE 1: LOCALITY MAP



ANNEXURE 2: SITE DEVELOPMENT PLAN 2



ANNEXURE 3: REASONS FOR THE DECISION

In reaching its decision, the Department, *inter alia*, considered the following:

- a) The information contained in the Application Form dated 23 September 2019 and received on 25 September 2018;
- b) The final BAR and the Environmental Management Programme (EMPr) submitted on 13 January 2020;
- c) The additional information received on 15 October 2021 and 16 November 2021;
- d) All relevant information contained in the Departmental information base, including, *inter alia* the Guidelines on Need and Desirability and Alternatives (dated March 2013) and DEA&DP NEMA EIA Circular 1 of 2012;
- e) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998);
- f) The comments received from Interested and Affected Parties (I&APs) and responses to these that were included in the final amended Basic Assessment Report dated March 2019;
- g) The balancing of negative and positive impacts and proposed mitigation measures;
- h) A site visit was conducted on 3 March 2020 by Malcolm Fredericks and Shireen Pullen from this Department and Belinda Clarke from CEN Environmental.
- i) The EA (Referenced: 16/3/3/1/D2/19/0012/20) issued on 28 April 2021 for the proposed upgrading and widening of the R404 and the construction of a new municipal service access road, George.

All information presented to the Department was taken into account in the consideration of the application for Environmental Authorisation.

1. Public Participation

The public participation process (PPP) included:

Both a pre-application and post application public participation process (PPP) were undertaken.

Pre-application PPP included the following:

- A stakeholder database was compiled, consisting of the surrounding businesses, landowners, municipal council and relevant state departments;
- An advertisement was placed in the George Herald on 7 February 2019;
- Two site notices were erected in visible public areas – one at the entrance to the site off the R404 and the other on the public notice board at the George Botanical Gardens;
- Background Information documents were compiled and sent to identified stakeholders;
- A pre-application meeting was held with DEA&DP, Cape Nature and the Breede-Gouritz Catchment Management Agency on 12 July 2019; and
- Interested and Affected Parties (IAPs) were afforded 30 days to submit comments on the pre-application BAR.

Post-application PPP

- A Draft Basic Assessment Report was made available for a 30-day review and comment period. Copies of the report were posted to the Department of Environmental Affairs and Development Planning, George Office, Cape Nature, George Office and Breede-Gouritz Catchment Management Agency, George Office;
- All registered Interested and Affected Parties (IAPs) and mandatory state departments were notified of the availability of the Draft BAR for comment. The notice included a copy of the Executive Summary of

the Draft BAR and a link to access the full report from CEN IEM Unit's website at <https://environmentcen.co.za/project-items/george-airport-support-zone-westerncape/>

- The notice specified that should IAPs have difficulty in downloading the Draft BAR from the website, they should contact the Environmental Assessment Practitioner (EAP) to make alternative arrangements;
- IAPs were given 30 days to submit comments on the Draft BAR; and
- An amended Site Development Plan was made available for comment from 15 October to 15 November 2021 for public comment.

A thorough PPP was undertaken and there were numerous objections and issues raised against by I&APs. The applicant's preferred site development plan was amended to address concerns raised by the adjacent landowners and George Municipality, as the preferred alternative did not facilitate equitable access to other surrounding properties and also did not follow the same alignment of the approved airport precinct roads master plan. The applicant's preferred alternative therefore contradicted the strategic objectives of the aforementioned roads master plan for the airport precinct area. The site development plan was then revised to change the access road to portion 4 to what was approved in the airport roads masterplan (DEADP Reference: 16/3/3/1/D2/19/0012/20) which provided access to portion 4, portion 60 and portion 130. This decision authorises this new site development plan with the more equitable access to the proposed development.

2. Alternatives

Two alternatives and the No-Go alternative were considered as part of the Basic Assessment Process, being:

Alternative 1

This alternative entails the subdivision of the site into 3 portions and rezoning of Portion A to "Business Zone VI" for a service station, Portion B to "Business Zone II" with a consent use for a "supermarket" to allow business and a small convenience store on this portion, and the remainder as 'Agriculture Zone I'.

This is not the applicant's preferred alternative and it was found to be unsuitable, as a retail store is not an airport related service. As above, land parcels surrounding the airport are earmarked to support the expansion of the George Airport in the Gwayang Local Spatial Development Framework (LSDF), therefore services that contribute to structure plans to promote infrastructural growth of airport related uses must be planned. According to the applicant, the proposed land uses do not allow for optimal functional use of the land.

Alternative 2

This alternative entails the rezoning of portion 4 of the Farm Gwayang 208 from Agriculture 1 into 14 erven to accommodate the following land uses namely:

a) One Business Zone VI erf to be used for a Filling Station comprising of:

- 4 dispenser islands for light vehicles
- 1 dispenser island for heavy vehicles;
- Three x 45 000 litre underground fuel storage tanks;
- Convenience store / service station shop;
- Quick Service Restaurant / Take-away with limited seating;
- Parking Bays (~19);
- Ablution and Information Centre;
- Internal service infrastructure that will connect to existing municipal services.

b) Seven Industrial Zone I erven to be used for warehousing and airport support services.

c) One Transport Zone II erf to provide for a vehicular internal road network to the development, by means of an access and egress point off the R404. A new traffic circle is required at the access point, as part of the existing entrance to the George Air Centre, a club house and labourer's accommodation with a total footprint of 4,6 hectares; The alignment of the access route was across portion 4, not in line with the approved roads master plan and did not make provision for equitable access. This access route was changes to derive at the preferred alternative.

- d) Four Open Space Zone II including watercourses and the existing farm dam, that will form part of the stormwater management system for the development; and
- e) One Agricultural Zone I (the Remainder) reserved for the approved Western Bypass Highway across the eastern side of the site.

The site development plan was changed to accommodate the access road to provide more equitable access. The lay-out also changes internally and the approved alternative was developed.

Approved Alternative:

The proposed development entails the change of land use from Agriculture I to Subdivisional Area, and subsequent subdivision into 13 erven to accommodate the following land uses:

- 5 x Industrial Zone I portions;
- 1 x Business Zone VI portion;
- 1 x Transport Zone II portion;
- 3 x Open Space Zone II portions &
- 1 x Agriculture Zone I portion (the Remainder)

The proposal also includes the establishment of a Transport Zone II erf to provide for an internal road network to the development, by means of an access and egress point off the R404. The alignment of this access route follows the same alignment of the approved roads master plan which will ensure equitable municipal services and vehicular access to farm portions RE/60/208 (131/208 & 130/208 & 132/208), 4/208 and 139/208.

This EA will be implemented in accordance with the amended Site Development Plan attached to this EA as Annexure 2.

No-Go Alternative

This alternative implies that the status quo remains and that the planned industrial service infrastructure (airport support zone services) will not take place in close proximity of the George Airport. This is not the applicant's preferred alternative for obvious reasons.

3. ENVIRONMENTAL CONSIDERATIONS

Key Factors Affecting the Decision

In reaching its decision to refuse the proposed development, this Department took the following factors into account:

3.1 Planning context

Western Cape Spatial Development Framework (PSDF)

The PSDF framework has a strong emphasis on revitalising urban spaces creating an urban living environment which is more convenient, efficient and aesthetically pleasing to residents.

According to the BAR, the EAP submits that with the current Covid-19 pandemic the entire world is struggling financially, and the town of George is no different. This Department is in agreement and therefore supports that it is therefore necessary that economic development is unlocked in some way or another. According to the BAR, the proposed development aims to contribute to the regional economic infrastructure by developing airport related uses in close proximity of the regional airport thereby supporting the economic growth in the area.

The proposed development supports the regeneration and revitalisation of urban economies specifically focusing on the areas adjacent the airport, which are earmarked for airport related development. Smart growth is promoted by ensuring efficient use of land and infrastructure by adhering

to the structural plans for the area and ensuring development that is in line with the planning principles of the area.

George Spatial Development Framework (SDF)

According to the George Municipality SDF (2019), the proposed site is situated outside the urban edge of George Municipality and therefore the proposal deviates from the George SDF from a desirability perspective. However, the site is located in a development node designated as an 'Airport Support Area'. The SDF states that "Airport Support Area is not intended as a location for urban expansion but for the uses in addition to and supportive of the airport's functionality and the convenience of users of the airport". The proposed land uses in the development are in line with those recommended in the George SDF for the Area, and the proposed activities are therefore consistent with the SDF and George SDF.

Policy F of George SDF (2019) states that the aim of the George SDF is to 'Manage the growth of urban settlement in George to ensure the optimum and efficient use of existing infrastructure and resources and in turn, secure the Municipality's fiscal sustainability and resilience, while preventing further loss of natural and agricultural assets. The proposed development is in line with this policy as it mainly constitutes airport support services such as a filling station and larger warehouse development. Furthermore, according to Policy F2: 'Direct the medium to long term growth of the George city area, when necessary, connecting to the existing urban footprint in a manner that reinforces existing accessibility and infrastructure networks and minimises impact on natural landscapes and agricultural resources. Item c of the Policy F2's Guidelines indicates that development of the George Airport precinct is supported in so far as it relates to the development of uses ancillary to the airport's operations and should not include activities already well catered for in the built footprint of the George urban area.

In light of the above, this Department agrees that the proposed development is limited within the designated Airport Support Area, and the intended land uses are consistent with the policy guidelines and objectives for the area in the SDF and LSDF. The development in effect will serve to strengthen and support the objectives of the Airport Support Area.

Gwayang Local Spatial Development Framework (GLSDF)

Currently the airport functions in isolation of the town and any complimentary commercial uses such as freight and logistics. According to the Final BAR fuelling facilities are absent and there is no public transport to and from town for employees. The Gwayang Local Spatial Development Framework (LSDF) earmarks the land between the planned (and approved) Western Bypass and the airport for 'Airport Support Zone' purposes. The zone includes properties opposite the airport with the alignment of the future bypass road as the boundary. Land uses will be strictly limited to those that support tourists and airport facilities that cannot be located in the town with the same practical function. Further, the zone is ideally located to provide facilities for tourism support and may include fuelling facilities and a hotel.

This Department is therefore of the opinion that the development proposal and site are therefore within the desired area for airport related land uses. The Gwayang LSDF states that fuelling facilities are absent in the area, thus the development will contribute to the demand of fuelling facilities. The Gwayang LSDF also identifies a new sub-regional industrial node in proximity to the N2 and airport, targeted at Southern Cape manufacturing, freight and logistics, and service industries. The development will support the establishment of the proposed node in the area.

This Department is therefore satisfied that the consequential environmental impacts of the new alignment of the access road to portion 4 has been adequately assessed and addressed. The development proposal (filling station and warehousing) is therefore ideal for the location. The proposed development is therefore in line with the GLSDF.

Airport Precinct Master Plan

On 4 May 2021, this Department approved the Airport Precinct Roads Master Plan. The previous proposal was revised to align the access road to portion 4 with this plan. Access to portion 60 is now equitable as it also allows access to portion 60 and portion 130.

3.2 Ecological Impacts

Vegetation

According to Veg map 2018, the vegetation type that occurs on the proposed site is 'Garden Route Granite Fynbos', which has a conservation status of 'endangered'. The Western Cape Biodiversity Sector Plan indicates the same vegetation type, with a threat status of 'critically endangered'. The vegetation on site has however been modified significantly due to grazing and this has been confirmed during the site inspection that was conducted by officials from this Department.

A search exercise will be undertaken for conservation-worthy and indigenous species. These harvested plants will be used for landscaping during rehabilitation post construction.

Aquatics

According to the Final BAR the property is characterised by two watercourses, which drains towards the south eastern part of the subject property. The effects of potential pollution and degradation of these watercourses are a concern considering the nature and type of the proposed development. There is also a small watercourse which drains into the dam that occurs in the south-western corner of the property that comprises of a grass channel with no associated aquatic vegetation. This dam in the south-western corner of the site receives runoff largely from the stormwater drain along the main road, as well as from the afore-mentioned watercourses and small tributary that crosses the site and its associated valley bottom wetland area.

The watercourses and the valley bottom wetland area within the site are considered to be in a seriously modified ecological condition with extensive loss of ecological functionality and as a result of cultivation of the area. The aquatic specialist recommended a corridor of approximately 20m for the larger watercourse and 10m for the smaller watercourse to accommodate stormwater flow within the site. The watercourses will be shaped as open swales that are planted with wetland vegetation such as *Juncus effusus*, *Carex gloerabilis*, *C. clavata*, *Isolepis prolifera*, *Pycnus polystachyos*, *Zantedeschia aethiopica* within the wetter bed together with buffalo grass *Stenotaphrum secundatum* along the banks. These were incorporated as a conditions of approval of this EA.

Groundwater

According to the Final BAR the site is considered suitable for the development of a filling station. The subject property is located on a weathered and fractured granitic aquifer that yields poor groundwater quality and is not used within 1 km of the facility. The aquifer has little potential to be developed. The final BAR further concludes that the risk of groundwater contamination occurring as a result of the proposed development is considered very low; with the consequences thereto insignificant. The report further submits that if the facility is appropriately designed, constructed and managed according to the norms and standards of the industry, no further mitigatory actions will be required. The report further submits that the possibility of groundwater contamination can however not be eliminated. It is further noted from the Final BAR that numerous surrounding landowners makes use of borehole water. The groundwater specialist further submits in his report that a leakage is difficult to detect as the impacts are not visible and can only be detected by indirect means such as drilling of boreholes, vapour surveys, geophysics, tank pressure testing, etc. However, this Department is convinced that the concerns relating to groundwater pollution can be adequately addressed by means of appropriate design, construction and management of the facility.

Traffic

The Traffic Impact Assessment states that a filling station is not regarded as a primary trip generator, since the majority of the total trips generated are passer-by trips that are intercepted from the adjacent road network. The report submits that traffic generated by the airport, as well as growth in the background traffic, was incorporated in the horizon year analysis. This Department is therefore of the opinion that the traffic impacts that may result from the proposed development can be adequately mitigated and will not result in unacceptable negative impacts on the receiving environment.

3.3 Socio Economic Aspects and other filling stations

According to the Final BAR, the proposed development will contribute to the character of the airport area, and it will also support the development of airport related uses adjacent to the George Airport. The Final BAR however acknowledges that the site is located outside the urban edge according to the George SDF and in an area identified as 'Intensive Agriculture', but it is within an area designated for 'Airport Support Zone' land uses in the finer-scale Gwayang LSDF, which guides planning in the area around the airport. The Final BAR further notes that this has now changed with the most recent SDF (2019), and the SDF identifies the area as the 'Airport Support Area'. It must be kept in mind that there are already two (2) approved filling stations within close proximity of the proposed site. The one filling station will be located on Portion 131 of the Farm No 208 and the other one on the ACSA Airport site (Portions 82 & 84 of the Farm No 208). However, it had recently been agreed that the owners of portion 131 will not be constructing a filling station on their property, thus only two filling stations (with the filling station on portion 4) will have rights.

3.4 Need and Desirability

The Guideline on Need and Desirability in terms of the Environmental Impact Assessment (EIA) Regulations, 2013, states that the consideration of "need and desirability" in EIA decision-making requires consideration of the strategic context of the development proposal along with the broader societal needs and the public interest.

The NEMA and the EIA Regulations highlight specific considerations that must be taken into account for every application for environmental authorisation, including the principles set out in section 2 of NEMA, the general objectives of Integrated Environmental Management set out in section 23 of NEMA, the minimum requirements set out in section 24(4) of NEMA, the criteria set out in section 24O of NEMA and in regulation 18 of the NEMA EIA Regulations. The statutory context for the consideration of Need and Desirability in the Need and Desirability Guideline (March 2013) of this Department requires that all administrative action must be based on "relevant considerations". As such, the competent authority must therefore have regard for a number of specific relevant considerations, including specifically having to consider the need for and desirability of the activity.

As such, and in accordance with the NEMA principles (Section 2 of NEMA) the competent authority must take due cognisance of the aforementioned; including...

- "Environmental management must place **people & their needs** at the forefront of its concern, & serve their physical, psychological, developmental, cultural & social interests equitably."
- "Development must be **socially, environmentally & economically sustainable**."
- "Decisions must take into account the **interests, needs & values of all I&APs...**"
- "The **social, economic & environmental impacts** of activities, including disadvantages & benefits, must be considered, assessed & evaluated, & decisions must be appropriate in the light of such consideration & assessment."

The fact that the proposed development site is located outside the George urban edge as defined by the George SDF, it is therefore deemed to be not consistent with the afore-mentioned document. However, it is recognised that the proposal is in line with the GLSDF, which is a subsection of the George SDF and as such the authorised development falls within what is defined as airport support services".

Technical Services Department of George Municipality submitted in their comment on the draft BAR that the proposed site is located in a greenfields area and therefore the George Municipality must have a Roads Network Master Plan finalised that will impact on this development. Furthermore, the Western Cape Government Transport and Public Works: Roads Planning, indicated in their comment on the draft BAR that the development cannot be supported since the access proposal is in conflict with the Municipality's Roads Network Master Plan (RNMP) for the area. Therefore, the site development plan for the proposed development was amended to bring it in line with the Roads Network Master Plan of the George Municipality recently (28 April 2021) approved by this Department.

3.5 George Airport North Eastern Precinct (GANEP) and the Roads Networks Master Plan

The George Airport North Eastern Precinct (GANEP) has several proposed developments, which will lead to an increase in traffic volumes in the area. As a result, the surrounding road network will need to be upgraded to accommodate the expected development trips. The purpose of this Road Master Plan is to investigate and steer the implementation of the required road infrastructure and to accommodate the expected precinct development traffic. The EA issued on 28 April 2021 grants access to the proposed site with an alignment on the boundaries of Farm 4/208. According to the RNMP, access to the application site is approved via a new single lane roundabout opposite the R404/Airport Main Access intersection and will also provide access to the properties to the immediate north and south of the proposed development site. The preferred access route was then revised to follow the approved alignment as per the EA Referenced: 16/3/3/1/D2/19/0012/20): issued on 28 April 2021.

3.6 Visual Impact

According to the Final BAR the airport occupies a large land portion east of the proposed site and form part of the cultural landscape. The airport has a control tower that forms a landmark and is highly visible when approaching from any direction on the R404 and R102. The visual impact assessment was undertaken with the main focus on this and not how the proposed development will impact on the rural, agricultural character of the surrounding environment.

The Final BAR further submits that the proposed site is located at a similar level as the airport with low lying valleys to the south and south east of the site. The topography to the north increases in height above sea level, while to the south it drops in height towards the ocean. This plays a specific role in the view sheds and visibility of the proposed development.

However, based on the assessment of the 8 identified viewpoints in the assessment, it is clear that the environment as defined by the Guideline for Involving Visual and Aesthetic Specialists in EIA Processes is an area or route of low scenic, cultural, and historical significance and is disturbed. Therefore, based on a Category 4 development, a moderate visual impact can be expected.

According to the findings of the Visual Impact Assessment (VIA), the visual exposure from viewpoints within 500m of the site are relatively high while the overall visual exposure is moderate to low due to the capacity of the environment to absorb the visual impact of the development. Visual sensitivity and landscape integrity are consistently moderate to low due to the surrounding environment being disrupted by the airport which can be seen from most of the viewpoints, as well as the quarry being visible from the eastern approach on the R102 and southern approach on the R404. Due to the underlying topography, existing trees and development, the environment has a moderately high capacity to absorb the visual impact of the development.

3.11 One Environmental System

Chapter 3 of the Constitution, which deals with "co-operative governance", states that all spheres of government and all organs of state within each sphere must ensure that government is "coherent" and must "co-operate" with one another by, amongst other things, "assisting and supporting" one another; informing one another of, and "consulting" one another on matters of common interest, "co-ordinating" their actions and legislation with one another, and adhering to agreed procedures.

Furthermore, in terms of the "Agreement" about the "One Environmental System" (section 50A of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") (as amended) and sections 41(5) and 163A of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA") (as amended) refer) the processes for a water use licence application ("WULA") in terms of NWA and for an application for environmental authorisation in terms of NEMA must be "aligned" and "integrated" in terms of the "fixed" and "synchronised" time frames legislated in terms of the Environmental Impact Assessment Regulations of 2014 (as amended in 2017 and corrected in 2018) ("EIA Regulations") and the Regulations Regarding the Procedural Requirements for Water Use Licence Applications and Appeals of 2017 ("WULA Regulations"). Section 24(4)(a) of NEMA also requires that the processes in terms of WULA and EIA must ensure that there is coordination and

cooperation between the organs of state. Regulation 7 of the EIA Regulations provides for agreements to be entered into to give effect to the requirement for co-operation and coordination.

The water use license in terms of Section 21 (c) and (i) of the National Water Act was issued on 4 October 2021. At the stage of the submission of the amended SDP, the water uses were authorized and the license contains no reason why the proposed development cannot be authorized in terms of the NEMA EIA Regulations.

3.12 Stormwater Management

The Final BAR submits that due to the topography of the terrain, stormwater naturally drains from the north to the south. Portion 4 therefore receives runoff from Portions 130 and 139 of the Farm Gwayang No. 208, which is located to the north of the subject property. The Final BAR further submits that sediment derived from erosion by water and other water borne contaminants such as diesel and oil, are often sources of pollution arising from construction activities, especially considering the nature of the development proposal. The Construction EMP states that a stormwater management plan must be developed to prevent contamination and entering of contaminated water into the stormwater system to manage flow control and erosion, as well as litter control and maintenance of existing infrastructure. The aquatic specialist further highlights that integration of watercourses within the site and instream dams near the southern boundary of the site in the stormwater management system is acceptable and will not create significant impacts related to loss of aquatic habitat. According to the Final BAR, the anticipated impacts of stormwater can be deemed acceptable as it can be adequately mitigated with appropriate measures in place. The stormwater management plan contains specific measures as to how these impacts can be mitigated. These measures will be incorporated into the amended EMP.

4. Scope and Validity of the Environmental Authorisation

This environmental authorisation defines specific operational aspects. The applicant has indicated that the construction activities (non-operational aspects) should be completed within a period of 10 years. The environmental authorisation's validity period has been granted for a period of ten years (10) years, (which excludes the operation of the filling station) during which period the construction activities must commence and be concluded, including the post-construction rehabilitation and monitoring, and submission of the final environmental audit. In light of the proposed implementation programme, the monitoring and post-construction rehabilitation can be adequately incorporated in the construction phase. The Holder is required to substantially implement the proposal within a period of 5-years after the environmental authorisation is issued. Where the activity has been commenced with, the EIA Regulations, 2014 (as amended) allow that (upon application) the period for which the environmental authorisation is granted may be extended for a further period of 5-years. The operational aspects (operation of filling station) of this Environmental Authorisation are granted until 31 January 2042 and during which period the operation, all rehabilitation and monitoring requirements and final environmental auditing and reporting must be finalised.

5. National Environmental Management Act Principles

The National Environmental Management Principles (set out in section 2 of the NEMA, which apply to the actions of all organs of state, serve as guidelines by reference to which any organ of state must exercise any function when taking any decision, and which must guide the interpretation, administration and implementation of any other law concerned with the protection or management of the environment), *inter alia*, provides for:

- the effects of decisions on all aspects of the environment to be taken into account;
- the consideration, assessment and evaluation of the social, economic and environmental impacts of activities (disadvantages and benefits), and for decisions to be appropriate in the light of such consideration and assessment;
- the co-ordination and harmonisation of policies, legislation and actions relating to the environment;

- the resolving of actual or potential conflicts of interest between organs of state through conflict resolution procedures; and
- the selection of the best practicable environmental option.

6. Conclusion

After consideration of the information and factors listed above, the Department made the following findings:

- (a) The identification and assessment of impacts are detailed in the FBAR received by this Department on 13 January 2021 and sufficient assessment of the key identified issues and impacts have been completed.
- (b) The procedure followed for the impact assessment is adequate for the decision-making process.
- (c) The proposed mitigation of impacts identified and assessed, curtails the identified negative impacts.
- (d) The EMPr proposed mitigation measures for the pre-construction, construction and rehabilitation phases of the development and were included in the FBAR. The mitigation measures will be implemented to manage the identified environmental impact during the construction phase.

In view of the above, the NEMA principles, compliance with the conditions stipulated in this Environmental Authorisation, and compliance with an approved EMPr, the Competent Authority is satisfied that the proposed listed activities will not conflict with the general objectives of integrated environmental management stipulated in Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and that any potentially detrimental environmental impacts resulting from the listed activities can be mitigated to acceptable levels.

2019-06-04



**agriculture,
forestry & fisheries**

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

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

From: Directorate Land Use and Soil Management
Tel: 012-319-7634 **Fax:** 012-329-5938
Enquiries: Helpdesk **Ref:** 2018_08_0159

Marike Vreken Town Planners
P.O. Box 2180
KNYSNA
6570

Attention: Marike Vreken

**ACT 70 OF 1970: PROPOSED SUBDIVISION AND REZONING OF A PORTION OF PORTION 4
OF THE FARM GWAYANG NO. 208, DIVISION GEORGE, WESTERN CAPE PROVINCE**

Your letter bearing reference Pr1648b09 dated 07 September 2018 refers.

This Department wishes to inform you that it has no objection to the proposed rezoning of a portion measuring approximately 7,35 hectares from Agricultural Zone I to Subdivisional Area from an agricultural point of view. The subdivision shall be considered upon receipt of the rezoning permit.

It is trusted that you will find the decision in order.

Yours faithfully

MS T.S. CHIPETA
ACTING DEPUTY DIRECTOR GENERAL: FORESTRY AND
NATURAL RESOURCES MANAGEMENT
DELEGATE OF THE MINISTER
DATE: 02/05/19

CC: Land Use and Soil Management Private Bag X 2 **SANLAMHOF** 7532
CC: Mr Brandon Layman Landuse Management Department of Agriculture: Western Cape Private Bag x 1 **ELSENBURG** 7607

RECEIVED
2018-11-27



**Western Cape
Government**

Agriculture

Cor Van Der Walt
LandUse Management
Email: LandUse.Elsenburg@elsenburg.com
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OUR REFERENCE : 20/9/2/4/3/638
YOUR REFERENCE : Pr1648b09
ENQUIRIES : Cor van der Walt

Marike Vreken Town Planners
PO Box 2180
KNYSNA
6570

Att: Marike Vreken

PROPOSED SUBDIVISION AND CONSENT USE: DIVISION GEORGE
PORTION 4 OF THE FARM GWAYANG NO 208

Your application of 07 September 2018 has reference.

The Western Cape Department of Agriculture has no objection against the proposed application.

Please note that in terms of the Subdivision of Agricultural Land, Act no. 70 of 1970, section 3 (f) states: "no area of jurisdiction, local area, development area, peri-urban area or other area referred to in paragraph (a) or (b) of the definition of "agricultural land" in section 1, shall be established on, or enlarged so as to include, any land which is agricultural."

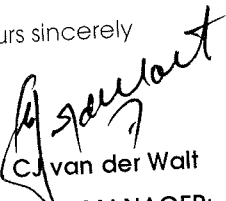
In terms of above, the consent of the National Minister of Agricultural, Forestry and Fisheries (DAFF) must also be obtained.

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. C.J. van der Walt

LANDUSE MANAGER: LANDUSE MANAGEMENT

2018-11-12

Copies:

Directorate Land Use and Sustainable Resource Management
National Department of Agriculture
Private Bag X 120
PRETORIA
0001

Department of Environmental Affairs & Development Planning
Private Bag X 6509
George
6530

George Municipality
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OUR REFERENCE : 20/9/2/4/3/638
YOUR REFERENCE : Pr1648b25
ENQUIRIES : Cor van der Walt

Marike Vreken Town Planners
PO Box 2180
KNYSNA
6570

Att: Marike Vreken

**PROPOSED REZONING & SUBDIVISION: DIVISION GEORGE
PORTION 4 OF THE FARM GWAYANG NO 208**

Your application of 04 June 2021 has reference.

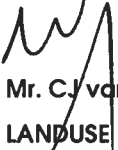
The Western Cape Department of Agriculture: Land Use Management has no objection to the proposed application.

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

A handwritten signature in black ink, appearing to be 'CJ van der Walt', enclosed within a hand-drawn oval.

Mr. C.J van der Walt

LANDUSE MANAGER: LANDUSE MANAGEMENT

2021-09-27

Copy:

George Municipality

PO Box 19

GEORGE

6530



REFERENCE: 16/9/6/1-12/73 (Job 25232)

ENQUIRIES: Mr L Martin

DATE: 17 August 2021

The Municipal Manager
George Municipality
PO Box 19
GEORGE
6530

Attention: Ms M Welman

Dear Madam

REZONING & SUBDIVISION: PORTION 4 OF FARM GWAYANG 208, DIVISION GEORGE, GEORGE MUNICIPALITY

1. The following refers:
 - 1.1 This Branch's letter 16/9/6/1-12/73 (Job 25232) dated 6 November 2018 to you.
 - 1.2 The Western Cape Government's Department of Environmental Affairs and Development Planning's letter 16/3/3/1/D2/0012/20 dated 4 May 2021 to George Municipality.
 - 1.3 Marike Vreken Town Planner's letter Pr1648b24 dated 13 May 2021 to this Branch.
 - 1.4 Ms M Vreken's e-mail on behalf Marike Vreken Town Planners on 1 June 2021 to Mr L Martin at this Branch.
 - 1.5 Virtual meetings that were respectively held on 14 and 22 June 2021.
2. This Branch offers no objection to this application, provided that the following are adhered to:
 - 2.1 The Department of Environmental Affairs and Development Planning's environmental authorisation dated 4 May 2021.

- 2.2 Access to all the subdivided erven west of the future George Western Bypass must be taken off the (internal GANEP) street network, with no access less than the minimum accepted access spacing (according to this Branch's Access Management Guidelines, 2020) measured from Main Road 347 (MR0034, R404), for which this Branch is the Road Authority.
- 2.3 Access to the subdivided erf east of the future George Western Bypass must be ensured of an acceptable access (which must carry the approval of either this Branch or the Municipality, depending on which Road Authority will be affected) off the public road / street network via a servitude right of way up to and in favour of the proposed Utility Zone erf.
- 2.4 No individual erf access immediately off MR00347 may be applied for.
- 2.5 Detailed designs of all the improvements along MR00347 and Trunk Road 2 section 9 (TR00209; R102) must be submitted to- and approvals obtained from this Branch's Chief Road Design Directorate, after which construction thereof must be completed in full.
- 2.6 Unless otherwise negotiated with this Branch, may no construction activities on (the current) Farm 208/4 commence before all the approved upgrades (as per paragraph 2.5) along MR00347 and TR00209 are constructed in full.
- 2.7 Unless otherwise negotiated with this Branch, no relaxation of Building Restrictions (Act 21 of 1940) may be applied for before the final road reserves of both MR00347 and Trunk Road 89 section 1 (TR08901; George Western Bypass) are confirmed by this Branch. When this Branch confirms its required road reserve spaces will Building Restrictions (most likely) be relaxed up to 5m from those future road reserve boundaries of both MR00347 and TR08901.
- 2.8 No External services may be located within any Proclaimed Provincial Road Reserve.
- 2.9 George Municipality and the developer must accept that this Branch will not contribute towards any upgrade along either MR00347 and / or TR00209, which is why George Municipality must ensure that the necessary funding to cover all the upgrades along the Provincial Road network will be made available.
- 2.10 George Municipality must ensure that all advertisements comply to George Municipality's approved advertising By-Law before requesting this Branch to comment thereon (from a structural and road safety point of view) and / or to issue any approval into terms of this Branch's Legislation(s).

3. This Branch, the Controlling Authority in terms of Act 21 of 1940, approves the proposed subdivision of Portion 4 of Farm 208 into an Agricultural Remainder (future George Western Bypass), 1 Utility Zone erf (which includes an open space), 1 Business Zone VI erf, 5 Industrial Zone I erven and 1 Transport Zone II (Municipal Street network) erf.

Yours Sincerely



SW CARSTENS

For DEPUTY DIRECTOR-GENERAL: ROADS

ENDORSEMENTS

1. George Municipality
Attention: Ms M Welman (e-mail: mhwelman@george.gov.za)
2. Marike Vreken Town Planners
Attention: Ms M Vreken (e-mail: marike@vreken.co.za)
3. Garden Route District Municipality
Attention: Mr JG Daniels (e-mail)
4. District Roads Engineer
Oudtshoorn
5. Mr E Burger (e-mail)
6. Mr SW Carstens (e-mail)

George Municipality

of Portion 4 of the farm Gwayang No 208

March 2018

E-mail: LDVROODT@gmail.com

Cover Letter

It is herewith certified that this Traffic Impact Assessment has been prepared according to requirements of the South African Traffic Impact and Site Traffic Assessment Manual THM 16 Volume 1 (COTO 2012) and Volume 2 (COTO 2014) and the South African Trip Data Manual TMH 17 (COTO 2013).

The report was compiled by

DR LOUIS ROODT Pr Eng

ECSA registration 820425

BEng Civil, MEng Transportation, PhD Civil Engineering

21 Lucy Crescent Stanford, 7210

082 575 3130

I declare that I have the requisite qualifications and experience to undertake this work. I thereby sign and certify the traffic assessment and take responsibility for the assessment. I declare that I have no conflict of interest with respect to this application and development.



Signed Louis Roodt

Date: 4 April 2018

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Annexure A: April 2014 Traffic Survey

Annexure B: George Airport passenger volumes

Annexure C: Traffic counting data R 404 and George Airport Road

Annexure D: Comparisons of competing filling station applications

Annexure E: TMH 16 Requirements Check List

1 Development Particulars

1.1 Introduction

This traffic impact statement was undertaken for the subdivision and rezoning of Portion 4 of Farm Gwayang No 208 for a new township development. The application for land-use rights includes for a Filling Station and Warehouses. No official township name has been given to the area and for the purposes of this study the proposed township is referred to as Gwayang Airport Industrial Area.

The locality is indicated below in **Figure 1-1**.

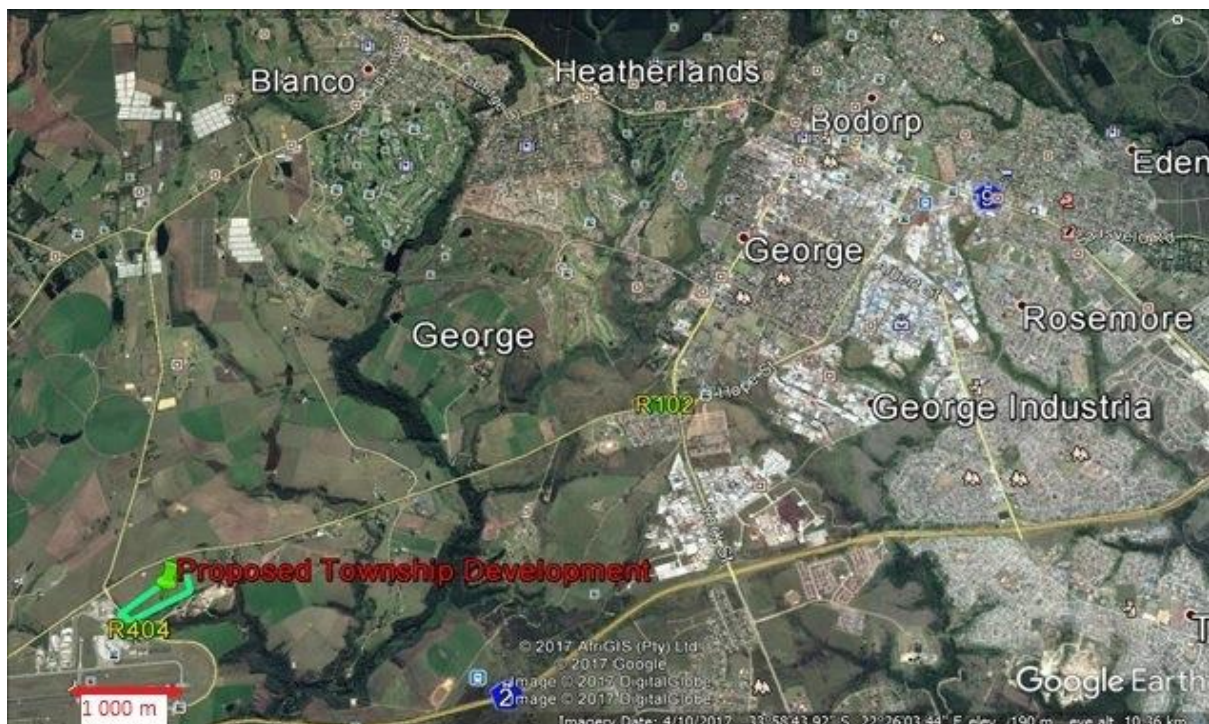


Figure 1-1: Locality Plan (Source: Google Earth)

The site is located to the east of the route R404 at the George Airport Main Access on route R404. This access currently forms a T-junction on route R404. The street address is Gwayang Portion 208 Farm on route R404.

The site development plan of the proposed township as to be subdivided and rezoned is shown in **Figure 1-2**. It is important to note that the current application is only a part of the south east quadrant formed by the intersection of routes R102 and R404, but that the traffic impact of the full future development of this quadrant will be taken into account. It is also pointed out that the eastern part of

the application site is bisected by a proposed provincial trunk road TR 89 (Western Bypass) and that a remnant of Portion 4 of Gwayang 208 will be created east of the trunk road by the subdivision of the farm. The eastern part of the subdivision, Remainder of Portion 4 of Gwayang 208 will include the future road reserve and the eastern remnant and retain their agricultural zoning. A temporary servitude for access will be established over stand 7 or 8 until the road is built. Access to the remnant on the east of the Western Bypass, from the east, will be established as part of the planning following the declaration of the trunk road and is not part of the traffic impact study. The alignment of trunk road 89 was published in the Provincial Gazette 7376 dated 10 April 2015, but only the general alignment is shown as a uncoordinated centre line on the regional plan. The unapproved preliminary design with detail coordinates of the varying road reserve width over Portion 4 were provided by Kantey and Templar Engineers, design consultants / service provider to the Western Cape Province. The coordinates will be accepted as reliable.

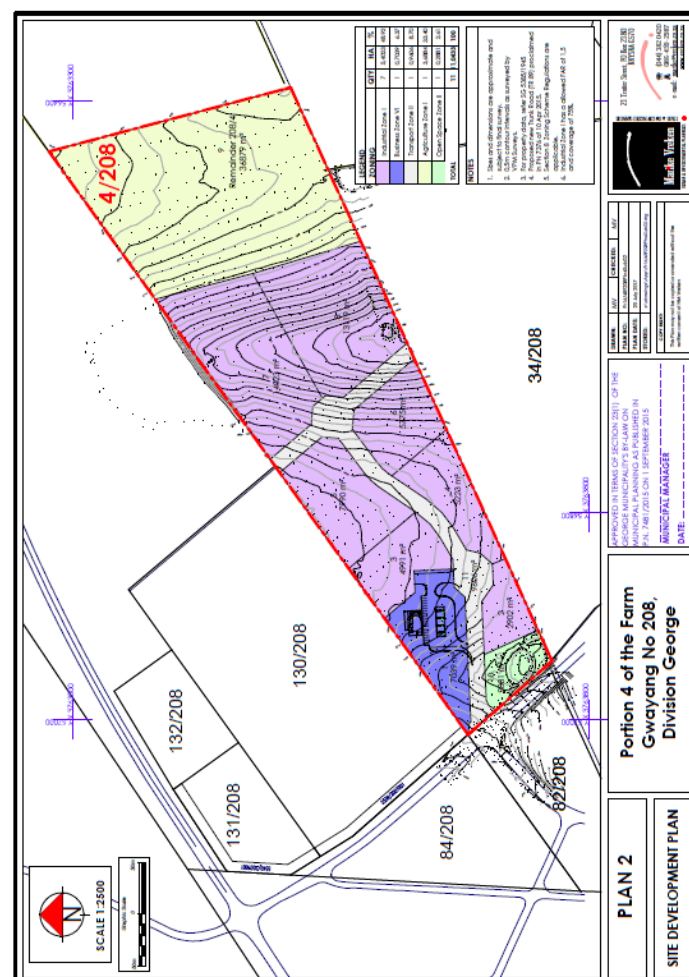
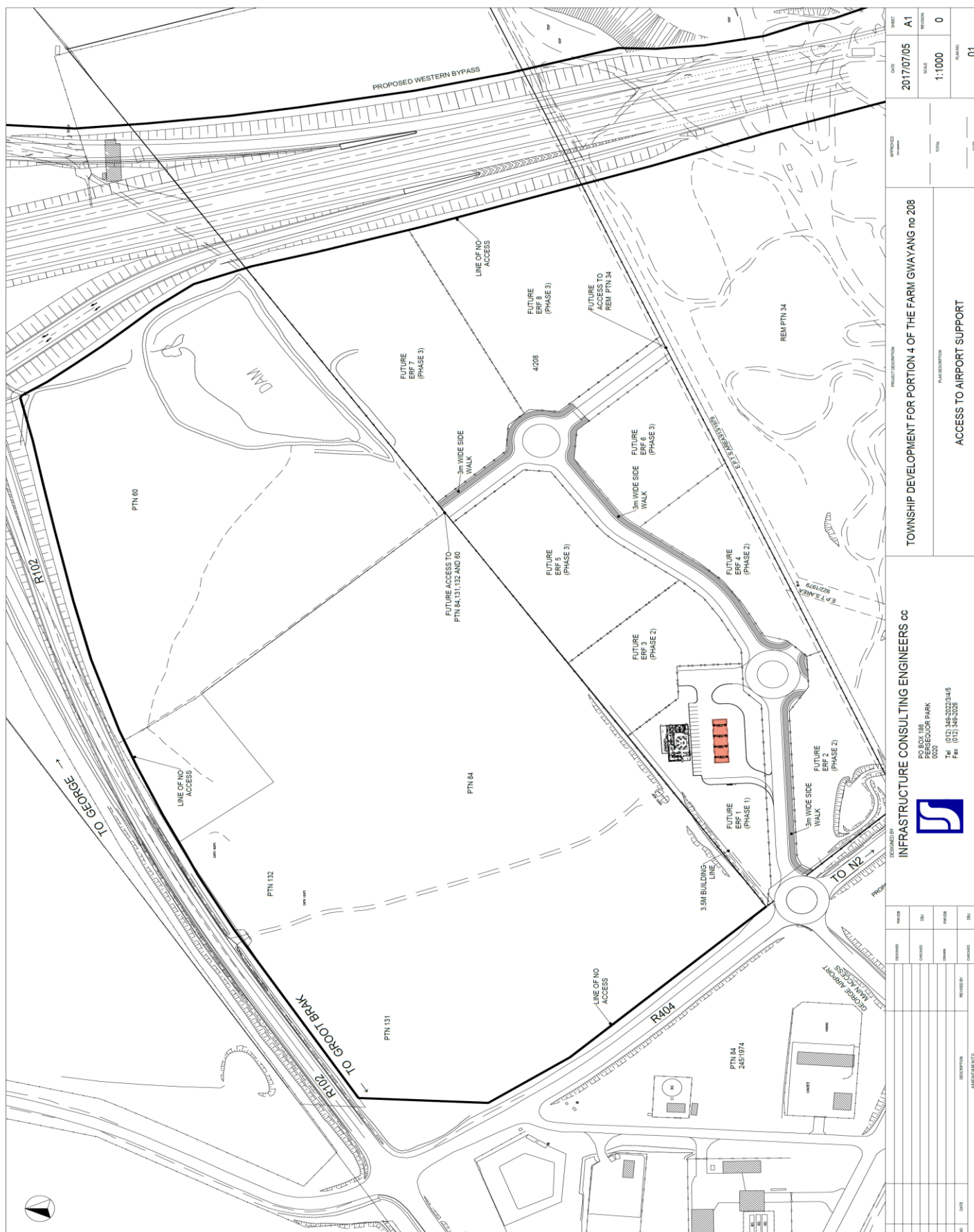


Figure 1-2: Site Development Plan



1.2 Size and/or extent of the site

The proposed township will be to the west of the proposed TR89 road reserve on Portion 4 of Farm Gwayang No 208 between the TR 89 and route R404. The proposed TR 89 (Western Bypass) is partially situated on Portion 4 of Farm Gwayang No 208. See **Figure 1.3** below. The size of Portion 4 is 11.0433 ha and the proposed areas of the land uses per zoning as shown in Figure 1-4.

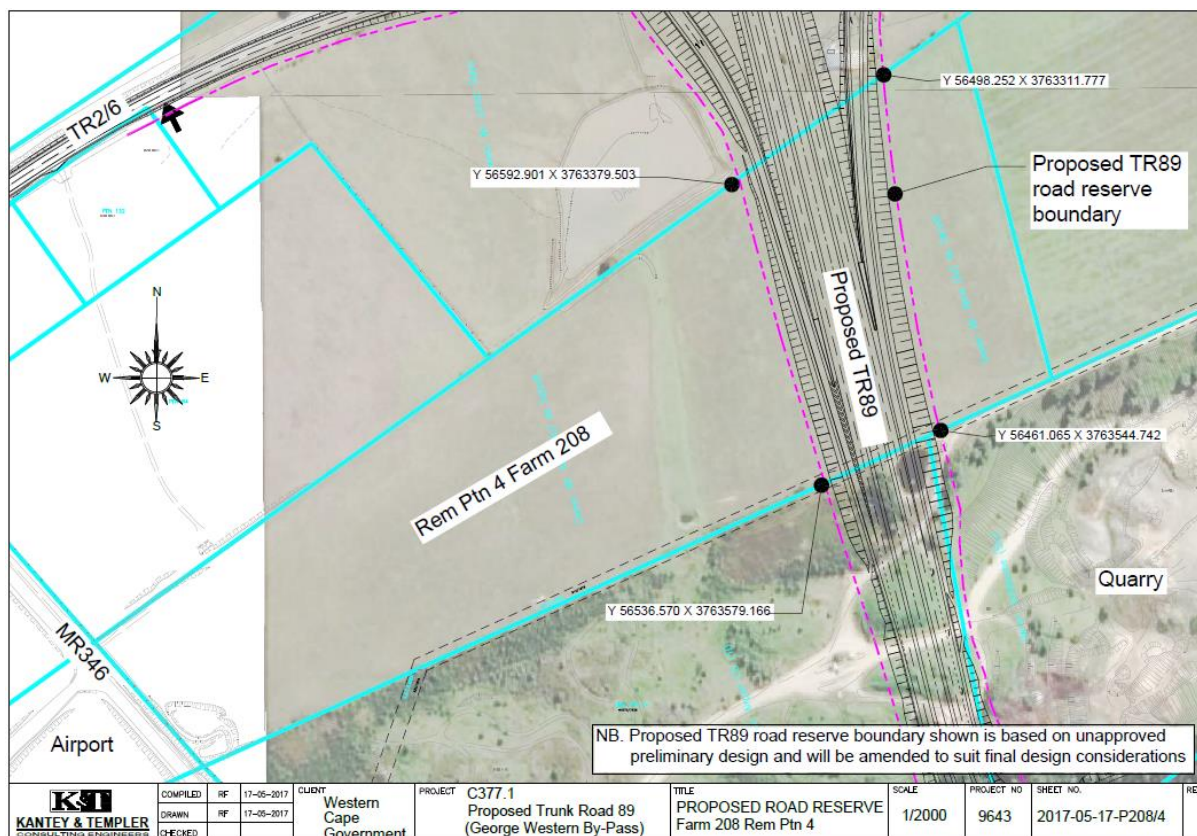


Figure 1-4: Proposed TR89 Road Reserve

LEGEND				
ZONING		QTY	HA	%
	Industrial Zone I	7	5,4023	48.92
	Business Zone VI	1	0,7039	6.37
	Transport Zone II	1	0,9606	8.70
	Agriculture Zone I	1	3,6884	33.40
	Open Space Zone II	1	0,2881	2.61
TOTAL		11	11,0433	100

Figure 1-5: Proposed Land uses and areas

The property is 11.0433 ha in size, of which 3.6884 ha is excluded as road reserve for the TR89 Western Bypass and the remainder to the east which is cut off from the development, resulting in the extent of the total development area of 7.3549 ha. The on-site provision for road reserve area for the development is 0.9606 ha and open space is 0.2881 ha. The total site area after deduction for the road reserve and open space is 6.1062 ha.

It is important to note that the proposed township will provide access to the land-locked properties to the north and the south of the property. The Portion 34 of Gwayang 208 to the south currently has an operational quarry and most of the eastern part is used for the mine and stockpiling. The quarry has its own access on route R404 that is 360 m south of the Airport Access, which is in turn 295 m from the intersection with the R102. The actual mine activities of the quarry will be on the eastern side of the TR89 Western Bypass when it will be built and will then not contribute to the traffic on the R404.

1.3 Land-use Rights

The existing land-use right for the property is Agriculture Zone 1. There is currently no activity on the property. There have not been any previous applications, latent land use rights and no traffic impact studies have been done.

The Spatial Proposals and Guidelines as included in the *Gwayang Local Spatial Development Framework (November 2015)* indicate that the property is within an Airport Support Zone. See area marked in blue on **Figure 1-6** below.

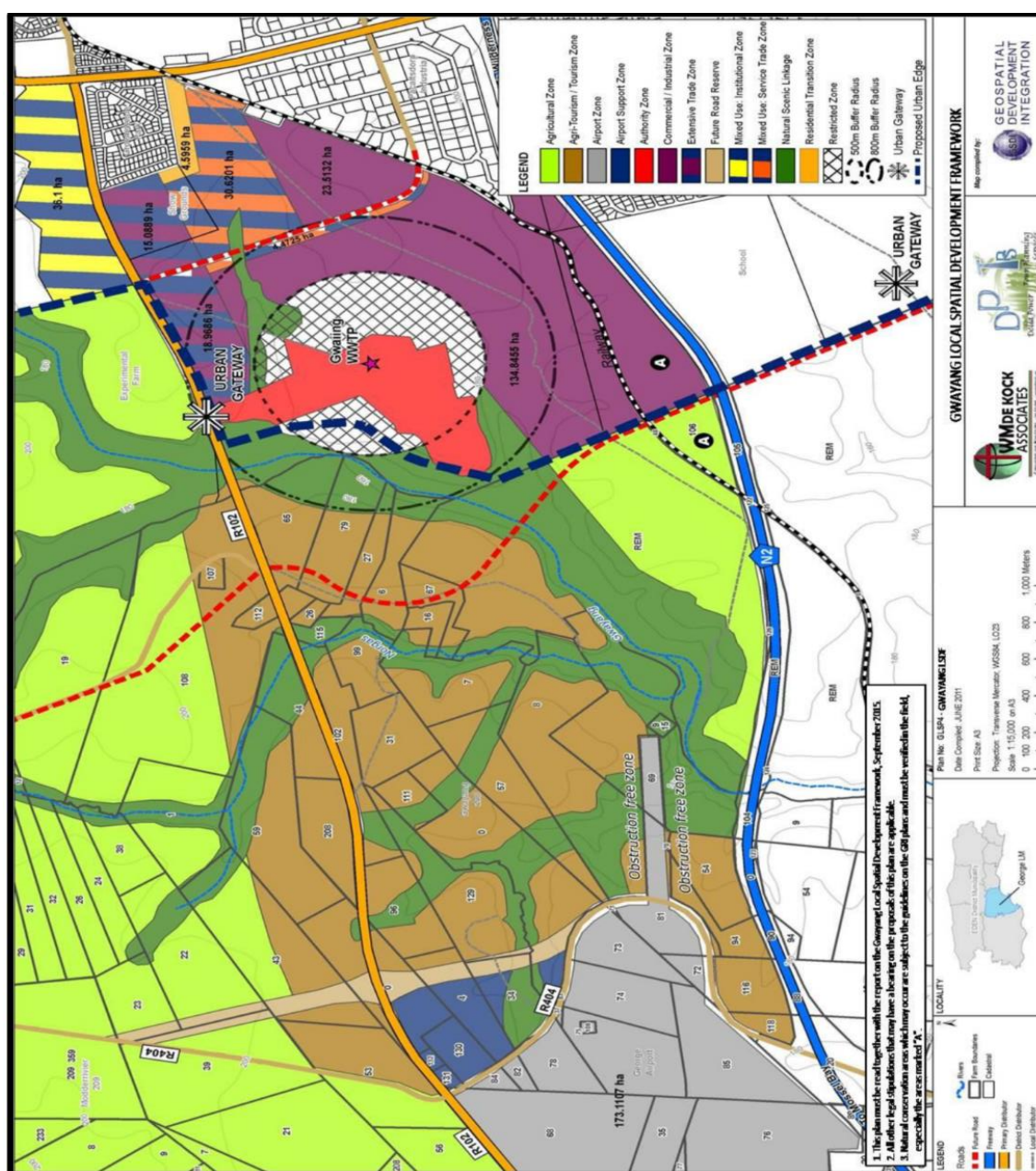


Figure 1.6 Gwayang Local Spatial Development Framework

This zoning is aimed at providing opportunities for land uses that are reconcilable with the airport. The allowed zoning includes for Agriculture Zone 1, Business Zone IV and V. The references to the development proposals contained in the SDF are quoted in Annexure E for ease of reference.

The proposed development will comprise of eight erven. One erf will be zoned Business Zone V for the purpose of a Filling Station, while the other seven erven will be zoned Business Zone IV for the

purpose of warehousing. Information regarding the proposed land-use rights is summarized in **Table 1-1** below:

Table 1-1: Proposed Development Land-use rights

<u>Land-use rights</u>	
Total Developable Site Area (excluding transport / roads and open space)	61 062 m ²
Land Use: Filling station Business V	7 039
Trip generation unit (Station) Code 946	1
Land use: Warehousing and Distribution Business IV	54 023
Floor Space Ratio (FSR) (Not defined in SANS 10400)	0.5:1
Floor Area Ratio (FAR) (Floor factor per SANS 10400)	0.5:1
Floor space	27 012
Gross Leasable Area (GLA) (85% of Floor Space) Code 150	22 960 m ²
Trip generation units (100 sqm GLA) Code 150	230

The required land-use rights for the proposed township comply with the *Gwayang Local Spatial Development Framework*.

At a meeting between the George Municipality planning officials and the consulting planners and engineers, the inclusion of a limited retail component, with specific focus on tourism goods such as souvenirs and hand crafts, as proposed. Such a land use will be complementary to the airport as tourism hub, but it is regarded as a pass-by trip generator that will not add to the AM and PM traffic peaks. As such, the inclusion or not of this land use or special zoning will not impact the traffic impact analysis or results.

1.4 Phasing

The will be completed in three phases:

- Phase 1
 - Erf1
 - Filling Station
 - Business V zoning
 - 0.7039 ha

- Envisaged date of implementation: 2018
- Phase 2
 - Erf 2, 3,4
 - Warehousing
 - Business IV zoning
 - 1.4989 ha
 - Envisaged date of implementation: 2019
- Phase 3
 - Erf 5,6,7,8
 - Warehousing
 - Business IV zoning
 - 4.0206 ha
 - Envisaged date of implementation: On demand after 2019

The site road network will also be implemented in phases providing access to the erven when required. The development of the adjoining area that will obtain access from the roads on Portion 4 cannot be predicted. The indications are that there is currently low demand for airport orientated development, as illustrated by the lack of development of existing filling station rights on Portion 60 and on the airport property. The development of warehouse rights other than on Portion 4 is therefore taken as beyond the 5 year design horizon.

2 Methodology

Table 2-1 below describes the approach and methodology followed in the execution of this study.

Table 2-1: Approach and methodology

GENERAL APPROACH AND METHODOLOGY	
Traffic Impact Study and Access Arrangements	TMH 16 & TMH 17 Generally accepted geometric guidelines as described in TRH 26.
Viability Study	Acceptable market standards and methodology.
THE FOLLOWING CRITICAL PEAK HOURS WERE ANALYZED	
Design periods	Weekly peak hour
STUDY PERIOD FOR THE DEVELOPMENT	
Design horizon year	The traffic investigations that were done were based on 2017 as the base year and the design horizon year will be 2022.
Planning horizon year	2035 (20 years from 2015 road masterplan model)

ROAD NETWORK ALTERNATIVES	
Network Alternatives	Both the existing short term and planned long term road network for the precinct was taken into account. This includes the construction of the TR 89 Western bypass to George that will change the traffic pattern in front of the George Airport dramatically.
TRAFFIC REPORTS TAKEN INTO ACCOUNT	
Traffic Reports	Syntell Traffic Report 2104 ICE Short term count 2017

The definitions of design and planning horizon years are quoted from the TMH 16 for clarity.

B2.1.2 “The design horizon year is the year selected for determining transportation improvements that are required to accommodate the proposed development. Transportation improvements must be designed for a horizon year of 5 years.”

B2.1.3 “The planning horizon year is the year selected for determining whether it is physically possible to accommodate the development together with future traffic growth. This analysis is not used for determining the transportation improvements required to accommodate the proposed development. The planning horizon year must be selected as one in which all developments in the study area are expected to be fully completed and developments in the area have stabilised. Planning horizon years of 20 years are typically used in municipal planning, but longer periods may be required.”

It is important to note that the planning horizon year could include the TR 89 Western Bypass of George and a resultant changed traffic flow pattern. These impacts fall beyond the design year impacts but will be discussed in broad terms.

3 Primary Study Area and Network

3.1 Introduction

This section describes the identification of an appropriate study area based on future land uses and the characteristics of the network included in the study area.

3.2 Latent Land Use Rights

As mentioned above the *Gwayang Local Spatial Development Framework* categorizes the property as within an Airport Support Zone. The current land use rights in the study area are Agriculture Zone 1, and the proposed land use rights are a remnant of land east of the proposed TR 89 to be retained as Agriculture Zone 1 and Business IV and Business V rights for the land between the R404 and the proposed TR 89. The impacts on accesses and neighbouring road network was evaluated from a capacity and operational point of view. Latent rights (rights that exist by are not yet exercised or have

lapsed) which consist of two fillings stations: one in the same quadrant of the intersection of R404 and R102 and the other on the airport property. These latent rights will be discussed in detail later. For the sake of completeness, the potential rights to Business V (warehousing as is compatible with the Airport Precinct, were considered as latent right.

3.3 Study Area

The proposed development will serve the north-south traffic movements along the R404 and the traffic movements along the George Airport main access road. The R404/George Airport main access road intersection is included in the study. The George Airport main access road leg of the intersection is currently stop controlled. The primary study area is defined in the TMH 16 Vol 1 as copied in the text box:

2.5.3 The elements to be included in the primary study area shall be selected as follows:

a) Accesses to the site. All accesses (vehicle, pedestrian and cyclist) to the site. Such accesses are also included in the study area of Site Traffic Assessments.

b) External roads. Elements from roads classified as external according to the Engineering Service Contribution Policy on which the development is likely to have an impact or which may not meet the requirements of the Traffic Assessment Standards and Requirements Manual. These elements shall be restricted to Class 4 and 5 roads in the vicinity of the development up to the first Class 1 to 3 roads that can be reached by the Class 4 and 5 road network from the development, up to and including the first connection(s) on the Class 1 to 3 roads.

The elements shall be restricted to those within a maximum distance of 1.5 km from the accesses to the site, measured along the shortest routes to the accesses, provided that there is at least one intersection within this distance. Where there is no such intersection, the distance will be extended to include at least one intersection.

Judgement may be exercised by the Assessor in selection the elements that must be included in the study area (including the first intersection on Class 1 to 3 roads).

The primary study is thus mainly determined by the classification of internal and external roads affected and not as in the old DOT manuals by the number of trips per movement. The classification of the roads is complicated by the mix of rural and urban character in the vicinity of the Airport Precinct. The external roads such as R404 will have a rural character, while the access to the airport and the proposed local road to the east thereof have an urban character.

Route R404 has elements of both Class R2 major and Class R3 rural minor arterials: linking towns, villages and rural settlements, tourist destinations, transport nodes (airport, railway sidings,

seaports, landing strips), small border posts, other routes. The traffic volumes (ADT) in excess of 3 000 vehicles per day places the route in Class R2 and spacing of accesses should be viewed from this point of reference. However, the existing spacing of 300 m between the R102 and the airport access road is a constraint.

It is important to note that the spine road that serves the proposed developments on Portion 4 of Gwayang No 208 is a Class U4 urban collector and commercial street that will give access to the whole of area in the south east quadrant of the intersection of R404 and R102.

Per definition of the primary study area, the first connection to a Class 2 or 3 road defines the limit of the study area. This is the intersection where the roundabout is proposed.

The secondary study area is defined in TMH 16 Vol 1:

2.6.1 The primary study area defined in the previous section is adequate for most land uses except those that require the transport of heavy goods. For land uses that require transportation of such goods, the primary study area must be extended to include a secondary study area as defined in this section.

The Proposed land uses of Business V (Filling Station) and IV Warehousing fall outside the scope of land uses that require transport of heavy goods, such as mining, heavy industrial/manufacturing. There is thus no secondary study area.

3.3 Accesses to the site

There is currently no formalized access to the site. Figure 1.2 shows a proposed roundabout at the intersection of the R404 and the Airport access road. This single lane roundabout will provide access to the proposed development. The primary reasons for the proposed roundabout are:

- Improved road safety;
- Improved convenience;
- Improved level of service of the intersection.

Turning movements at the intersection are high on all approaches. The high turning movements result in high conflict potential at the intersection.

The site road network will consist of a two-way single carriage way with a lane width of 3.5m and a 16m road reserve. A 1.5m surfaced pathway will be included within the road reserve to allow for non-motorized transport and pedestrians. The proposed Service Station will receive access via a marginal access from this road as well as a roundabout as indicated on Figure 1.2. This will allow fuel tankers to follow a one-way route during deliveries.

3.5 External Roads

The main external road network in the vicinity of the proposed service station consists of National Route 2 (N2) Freeway, Provincial Road R404, Provincial Road R102. The George Airport main access road connects to the R404.

N2 Freeway: The N2 Freeway connects major towns along the route, such as Mosselbay and George. The proposed site is connected to the N2 via a diamond interchange on the R404, approximately 2.5 km south along the R404. The two terminals on the R404 are stop controlled for the exit ramps. This external route does not fall into the scope of being included in the traffic impact study.

R404 (MR346): The R404 is a Proclaimed Provincial Main Road (MR346) that connects the N2, the R102 and National Route 9 (N9/Outeniqua Pass) on the western side of George. It is also the only connection from the N2 to Herold's Bay. The R404 provides the main access to George Airport from the N2 and the R102. The R404 is a 2-lane road with gravel shoulders and a posted speed limit of 60km/h. The R404 is classified as a Class R2 arterial in a semi-rural roadside development area. The current width of the road reserve varies between 40 m at the interchange and 25m. The planning of trunk road TR89 as the western bypass will provide for a road reserve will be adequate for the design of the trunk road. For the remainder of the R404 that will serve the airport towards the R102, 25 m road reserve will be adequate as this section will revert to a Class R3 road. The section between the N2 and R102 is 2.81km in length. R404 is the Class R2 / R3 road on to which the development connects and the limit of the traffic impact study is determined by this road. A roundabout serving both the development and the airport is proposed. The airport access road is 300 m from the R102.

R102 (TR2/6): The R102 is a Proclaimed Provincial Trunk Road (TR2/6) that runs parallel to the N2 and connects Great Brak River with George and intersects with the R404 north of George Airport, providing access to the airport from the east and the west. The intersection is stop controlled for traffic along the R404. The R102 is a 2-lane road with tarred shoulders with a posted speed limit of 100km/h. This road is classified as Class R2 Primary Arterial in a semi-rural road side environment.

George Airport access road: The Airport main access intersects with the R404 with a T-junction. This T-junction is approximately 300m from the R102/R404 intersection. The Airport access road at the T - junction is a 2-lane road with kerbing. This road can be viewed as an urban Class U4 collector in view of serving multiple land uses and services linked to the airport.

3.6 Secondary Study Area

The proposed development does not require the transportation of heavy goods as previously discussed. The primary study area is therefore not extended to include a secondary study area.

4 Background Information

4.1 Transportation Facilities

All the transportation facilities relevant to the assessment were discussed in Chapter 3, and is shown in the schematic diagram (**Figure 4-1**) below. The proposed improvements to the connection onto the external road are also indicated.

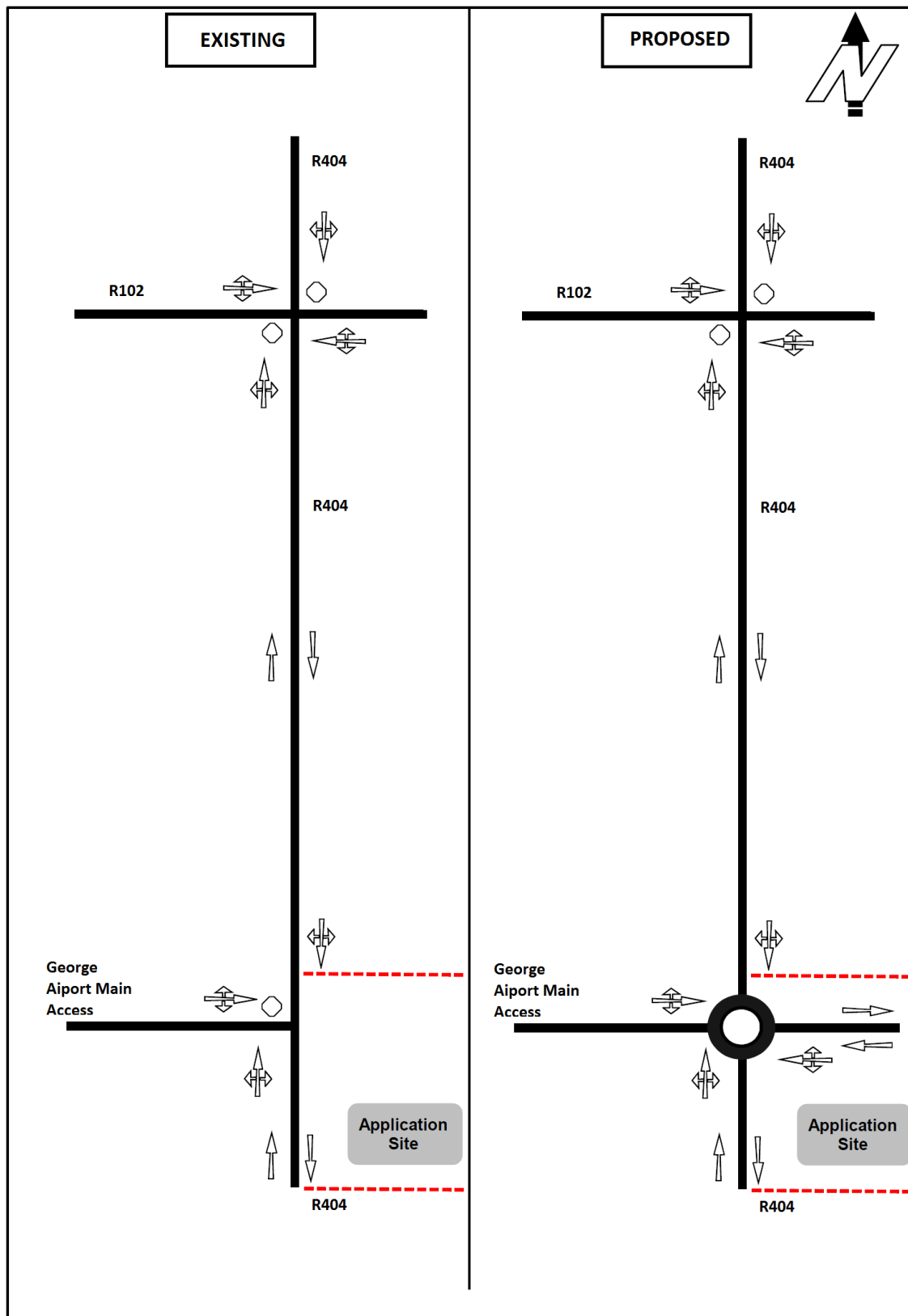


Figure 4-1: Existing and Proposed Road Network and Lane Layout

The construction of the George Western Bypass, although at an unknown date as indicated in the letter dated 7 June 2011 under reference 13/3/5/1=12/75 Taak 19151 from the Department of Transport and Public Works, Western Cape Province Government, will take all through traffic from the R404 and the portion north of the roundabout to R 102 will become a dedicated entrance to the Airport Precinct and support Zone.

4.2 Land Developments

The properties to the immediate north and south of the proposed development will also receive access via the new township. The current land use on these properties is Agricultural. The future land-use rights for these properties provides for Business IV (Warehousing) in support of the Airport Support Zone as stated in the *Gwayang Local Spatial Development Framework*. The land use outside the airport industrial area will remain agriculture.

4.3 Site Investigations

Site investigations were done by ICE visiting the site on weekly basis during March 2017. Short term traffic counts were completed during these investigations.

Queuing during the weekly peak hour on the Airport access road leg of the R404/Airport main access road was also noted. **Figure 4-1** below was taken a site investigation on 18 February 2017 and clearly indicates the queuing on the Airport access road during the peak hour.

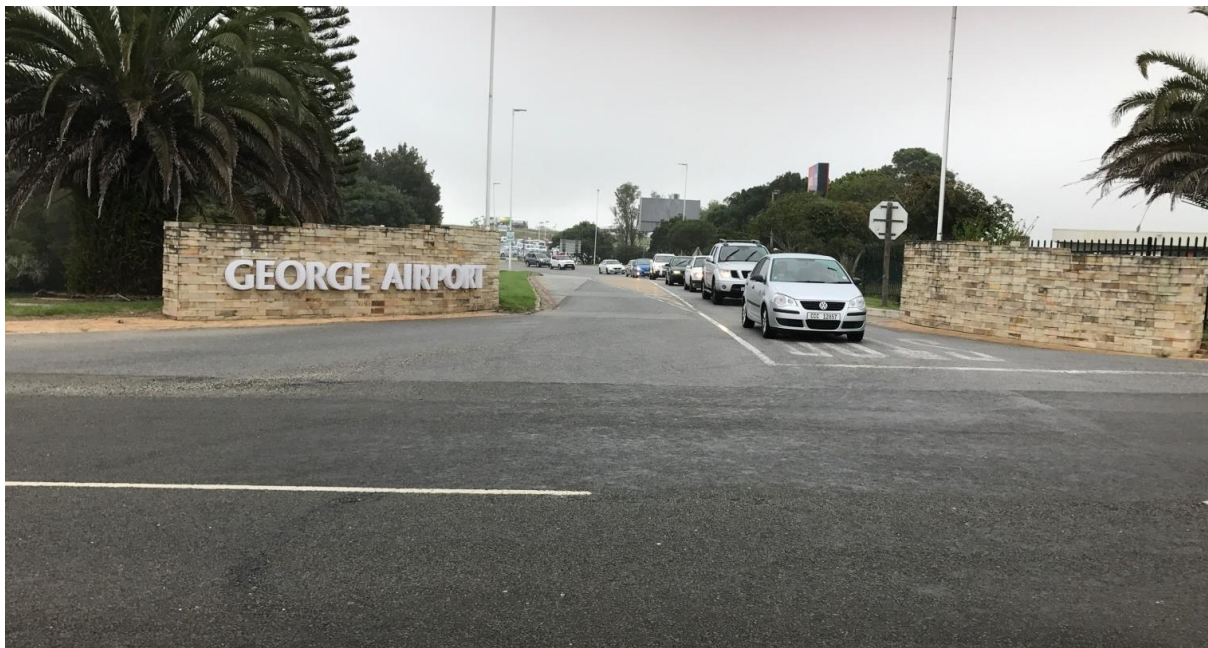


Figure 4-2: Queuing on the Airport main access road leg during the peak hour

The pictures below were taken during various site investigations.



Figure 4-3: R404/George Airport main access road intersection



Figure 4-4: George Airport main access road during peak hour



Figure 4-5: Approach to R404 intersection from George Airport



Figure 4-6: Traffic conditions at R404/George Airport main access road during peak hour

4.4 Traffic demand estimation and demand-side mitigation

Traffic demand was based on existing traffic as counted / projected plus generated traffic as calculated as per Addendum B of TMH 16 Vol 1.

It is expected that traffic volumes on the R404 past the Airport will decrease with the construction of the proposed George Western Bypass TR89. Traffic from the R102 towards the N2 and Herolds Bay will be diverted along the TR89.

The demand-side of the warehouse component, which will generate trips by workers in the AM from and PM peaks to the George residential areas, can be mitigated by providing public transport facilities, such as minibus stops, to make public transport attractive. Provision will be made on the on-site road network for the construction of paved non-motorised lanes adjacent to the traffic lanes for future cycling lanes, if an integrated cycling network is to be developed in the George Municipality.

No elements of the transportation system within the study area will be affected to an extent where it will not meet capacity requirements.

4.5 Modes of transport

The proposed development is approximately six (6) km from the outskirts of George and current settlements. The roads linking the Airport to the George municipal urban edge are provincial and national. The provincial long-term planning provides for the TR89 western bypass. Regional transport will be motor vehicle based, but other modes of transport may be relevant to the movement of people between the George urban area and the airport precinct.

4.5.1 Pedestrians and cyclists

The distance to work for commuters staying in George precludes walking and limits cycling. Cycling facilities do not exist along the primary link road, the R102. Provision will be made for pedestrians on sidewalks within the development, as public transport may stop at the entrance of the development. Provision will also be made for cycling lanes on the roads within the development to link up with future cycling routes, if they will be developed as part of the municipal integrated transport plans..

4.5.2 Taxis

It is foreseen that most of the workers will use taxi services to commute to the Airport Precinct and Support Zone.

4.5.3 Busses

The GoGeorge bus project can be expanded to serve the airport area if and when demand justifies.

4.5.4 Private vehicles

Private vehicle will be the dominant mode for management employees. The trip generation rates in the TMH 17 is based on historic trip making patterns with a typical split between private and public transport.

4.6 Proposed improvements

It is proposed that the existing T-Junction intersection between the R404 and the George Airport main access road be upgraded to a 4-legged roundabout, as indicated on Figure 1.4 and Figure 5.1. This roundabout will provide the only access to the proposed township and the adjacent properties to the north and south. The roundabout will consist of a single lane with a 32m diameter. The circulation road width will be 5,5m. The roundabout can be offset to the east side to not encroach on the airport property on the west side. All signs and markings will be to South African Road Traffic Signs Manual requirements.

It is a provincial roads requirement that rural roundabouts be illuminated. The airport access road to the west is already illuminated and the access road to the development to the east will be illuminated. Street lights should be provided on the R404 for at least 300 m either side of the roundabout. The

approach from the R102 to the roundabout (300 m) starts from a stop-controlled intersection and no transition from dark to the required light intensity needs to be provided. Speed limits of 60 km/h and 40 km/h are proposed at 200 m and 100 m before the roundabout respectively. Street light spacing of approximately 50 m will require 7 masts. The approach from the south circumvents the eastern end of the runway by means of a left hand 180-degree curve with a radius of approximately 300 m, implying a design speed of 90 km/h with 10% superelevation. After the left-hand curve, a flatter right-hand curve (approximately 500 m radius) directs the road to the airport entrance. The airport emergency access is in the middle of this curve. The spacings from the airport access road to the emergency access and then to the end of the R=300 m curve are both approximately 350 m. It is proposed that the speed limit on the R=300 m curve be posted at 90 km/h and reduce to 80 km/h at the emergency access. Further reductions to 60 km/h and 40 km/h are proposed at 200 m and 100 m before the roundabout respectively. The street lights can start at the emergency access with a transition on the first 150 m to full lighting intensity on the following 200 m. With a 50 m spacing, 8 masts will be required. The final lighting design will be done by an electrical engineer as part of the detail design.

5 Trip Generation

5.1 Primary trip generation

The trip generation of the filling station as such is 40 trips per hour (Code 946 in TMH 17) that will be directed through the accesses and roundabout. A filling station is not a primary trip generator since the majority of the total trips generated are pass - by trips that are intercepted from the adjacent road network. It is thus concluded that a filling station has a marginal impact from a capacity and operational point of view. Allowance is however made for 20 primary trips for the Filling Station during the peak hour.

The peak hour trip generation rate of the warehousing and distribution (Business IV: Code 150 in TMH 17) is 0.42 trips per 100 sqm GLA. A more conservative rate of 0.5 trips per 100 sqm GLA (+20%) was used in the calculation. The weekday AM and PM trips for the 27 598 sqm GLA primary development are thus 321 trips. These are split 60% in and 40% out in the AM peak and 45% in and 55% out in the PM peak. See Table 5-1.

5.2 Other trips

It is required to discuss and analyse pass – by, diverted and transferred trips.

The primary trips, as discussed above, for the filling station is pass – by trips, as filling up with fuel is normally done as part of a primary trip. The trip generation of 40 trips for fuel is thus vehicles already driving on the R404.

Diverted trips being trips diverted from other roads such as R102 and N2 are taken as zero, as these routes are too far from the fillings station to be convenient.

Transferred trips are also taken as zero. The TMH 16 allows for small areas to consider the generated primary trip as transferred trips, as some warehousing nearer to the town of George will transfer to the Airport Support Zone. This Zone is isolated and the impact on trips in the George industrial area is beyond the traffic impact study. The establishment of the warehousing area in support of the logistics of the airport will be beneficial as trip lengths will be reduced and traffic in George reduced.

5.3 Latent Land Use Rights

The latent (potential) land use rights in the study area is included the full development of the Airport Support Zone as indicated in the *Gwayang Local Spatial Development Framework*. The road network of the proposed township will provide access to the properties directly to the north and south within the Airport Support Zone.

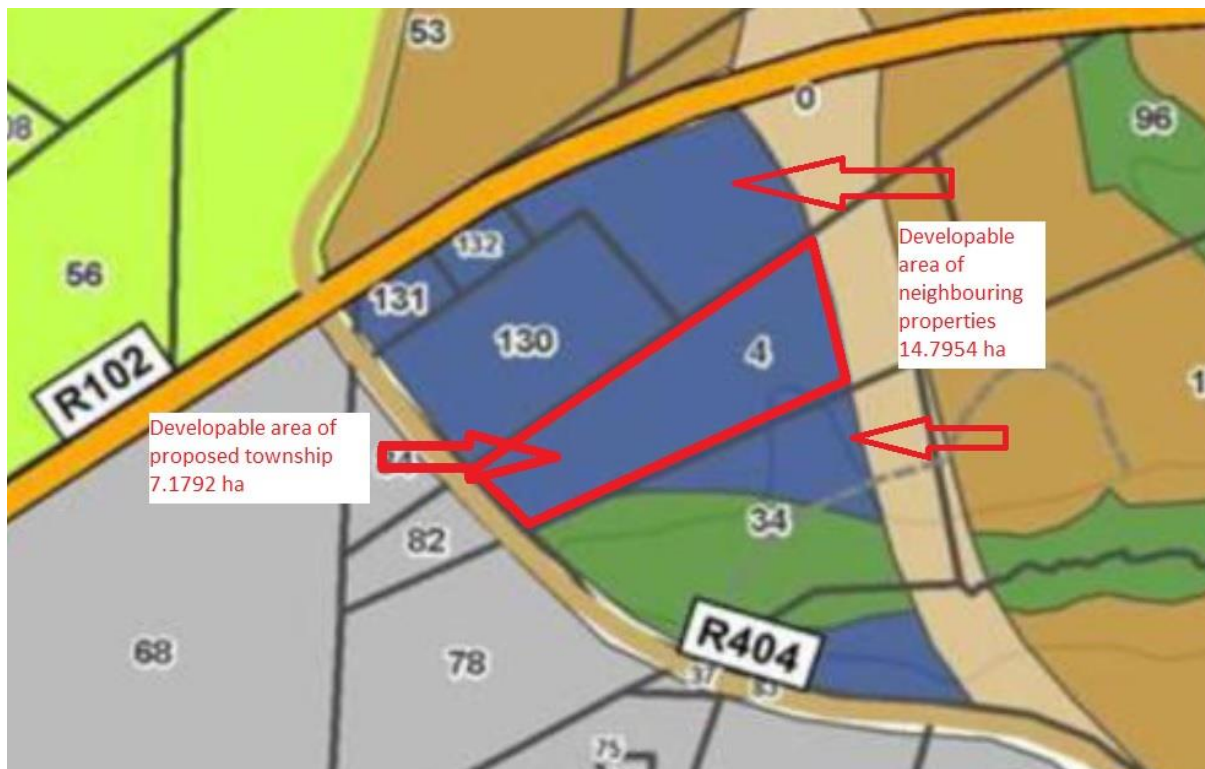


Figure 5-1: Developable area in South Eastern quadrant of R102 / R404 intersection

The combined size of the neighbouring properties is 147 954m². Allowance for the road reserve of 13% was used and a Floor Area Ratio of 0.5:1. The Gross Leasable Area for the neighbouring properties was therefore calculated at 64 147m². The future land-use rights of Warehousing and Distribution were used for the purpose of trip generation calculations. The proposed development on Portions 131 and 132 included a hotel and Barnyard theatre. These land uses do not generate trips in the AM

and PM peaks of the dominant land use of warehousing and distribution and were not included in the calculations.

The time horizon for the development of the latent rights is considered in the long term and should be part of the planning horizon, which is excluded from a traffic impact study. These trips were, however, included to illustrate the reserve capacity of the roundabout as proposed.

The expected trip generation for the primary area is indicated in Table 5.1 below.

Table 5-1: Expected trip generation

Land Use	Extent (m²) GLA	WEEKDAY AM PEAK HOUR				WEEKDAY PM PEAK HOUR			
		TRIP RATE	TRIPS	TRIPS IN	TRIPS OUT	TRIP RATE	TRIPS	TRIPS IN	TRIPS OUT
Warehousing & Distribution (Township)	27598	0.5	138	60%	40%	0.5	138	45%	55%
				83	55			62	76
Warehousing & Distribution (Neighbours)	64147	0.5	321	60%	40%	0.5	321	45%	55%
				192	128			144	176
Filling Station	1 station		60 (20)	50%	50%		20	50%	50%
				10	10			10	10
TOTAL PRIMARY TRIPS			479	285	193		479	216	262

6 Traffic Impact Assessment

6.1 Design horizon year

The application would have been submitted during 2017. The submission in 2018 will not have a significant impact on the traffic aspects of the application, as it will be shown that the proposed roundabout has reserve capacity. The horizon year will be measured for 5 years from 2017 up to 2022. The assessment was undertaken “with” the proposed mitigation measures (roundabout). No assessment was done “without” the proposed mitigation measures as there is currently no formal

access to the property. The access to the airport under the current stop control is problematic in the peak periods, as was observed during the site visit. This current situation was not analysed as the T-junction is converted into a 4-legged roundabout.

6.2 Assessment Hours

The trip rates for the generated traffic were developed for the Weekday AM and PM peak. The weekday trip rate is higher than the Saturday trip rate. The traffic survey completed in 2014 indicates that the highest traffic volume at the existing R404/George Airport main access road was also during a Weekday PM peak. The combined effect of the background and development traffic will therefore result in the highest traffic demand during the Weekday PM peak hour.

6.3 Traffic Volumes

The traffic to be generated by the proposed township and neighbouring latent land-use is indicated in Table 5.1 above. These volumes indicate trips generated when the Airport Support Zone is entirely developed. Therefore no allowance was made for traffic growth with regards to the Airport Support Zone. The traffic generated by the airport, as well as growth in the background traffic, was incorporated in the horizon year analysis. This assumes that the western bypass will not be built in this horizon period.

A traffic survey completed in 2007 indicates a 50-50 split between left and right turn movements onto the R404, of vehicles approaching the intersection on the Airport access road. This was confirmed with results of a survey completed in February 2017. The traffic survey completed in 2014 indicates a Weekday PM peak hour traffic volume of 225 vehicles approaching the R404 intersection from the Airport.

According to a datasheet published by Airports Company South Africa (ACSA) the average annual increase in air transit passengers making use of George Airport since 2013 is 8.1%. See datasheet attached in Annexure B. Traffic volumes were escalated with 8.1% in accordance with the increase in passenger numbers at the airport. The peak hour traffic volume on the Airport access road approach is escalated to 418 vehicles in 2022 with a 50-50 split (209 vehicles) for left and right turn movements. A further 72 vehicles will be added to allow for traffic generated by the Airport Support Zone.

A one third split will be allocated to each of the existing legs of the existing intersection. This calculates to 72 IN movements from each of the legs and 87 OUT on each of these legs during the Weekday PM peak hour.

Traffic volumes on the northern and southern legs approaches on the R404 will be escalated with 5% from 2014 up to 2022. A further 72 vehicles will be allocated to turning movements from each of these legs towards the proposed township to allow for trips generated by the Airport Support Zone.

The traffic volumes at the proposed roundabout during a Weekday PM peak hour in the horizon year are indicated in Figure 6.1 below.

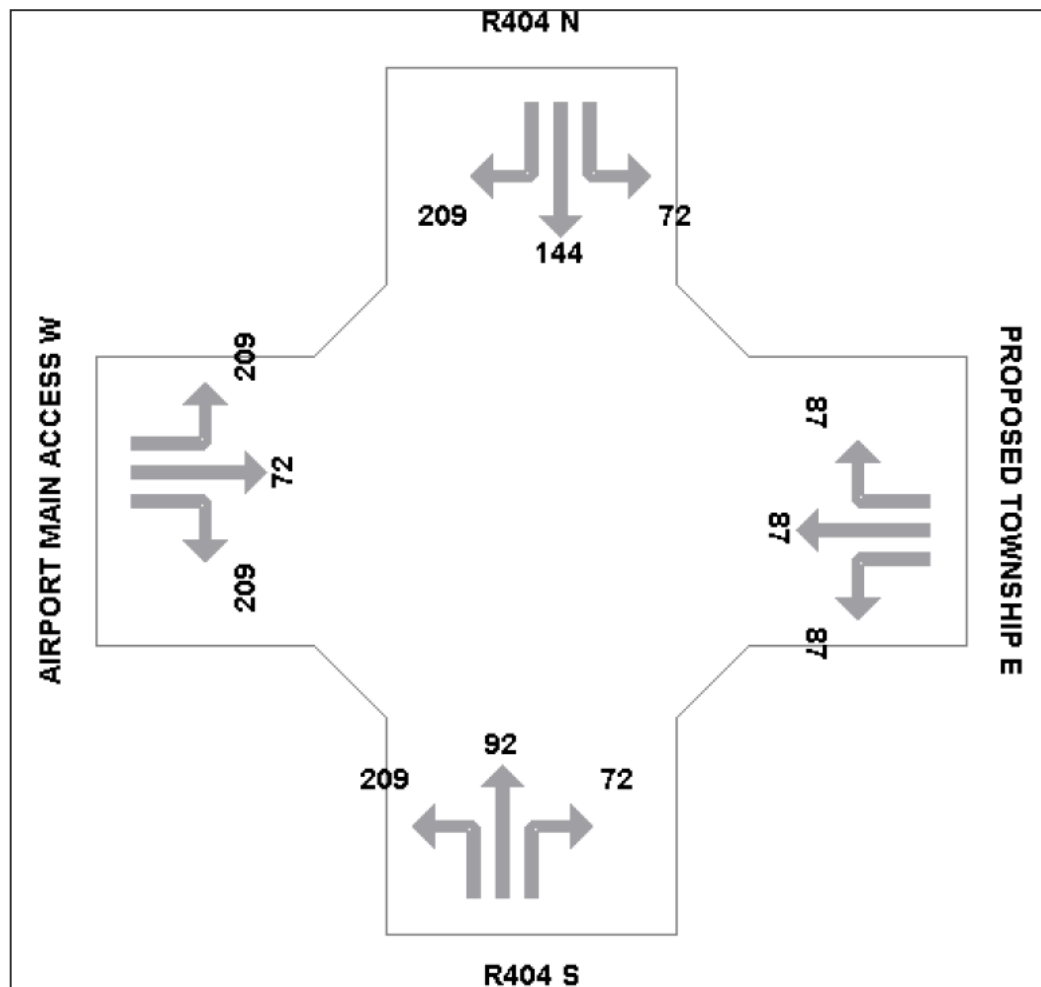


Figure 6-1: Weekday PM peak traffic volumes at R404/Airport main access road intersection in horizon year

7 Expected Traffic Impact

The results of the capacity and operational analyses show that the proposed intersection can easily accommodate the expected additional vehicle trips, not only for the horizon year, but also for the full trip generation from the Airport Support Zone.

The results of the Weekday PM Peak Hour Capacity and Operational Analyses are summarized in Table 7.1.

R404 / GEORGE AIRPORT MAIN ACCESS - ROUNDABOUT										
2022 WEEKDAY PM PEAK HOUR										
Roundabout										
Vehicle Movements										
Mov No	Turn	Dem Flow (veh/ h)	% HV	Deg of Satn (v/ c)	Aver Delay (sec)	Level of Service	Mean Cycle- average Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/ h)
R404 S										
1	L	220	0.0	0.377	8.6	LOS A	2	0.63	0.67	47.4
1	T	97	0.0	0.377	8.6	LOS A	2	0.63	0.67	47.4
1	R	76	0.0	0.377	8.6	LOS A	2	0.63	0.67	47.4
Approach		393	0.0	0.377	8.6	LOS A	2	0.63	0.67	47.4
PROPOSED TOWNSHIP E										
4	L	92	0.0	0.311	10.4	LOS B	2	0.72	0.75	46.3
4	T	92	0.0	0.311	10.4	LOS B	2	0.72	0.75	46.3
4	R	92	0.0	0.311	10.4	LOS B	2	0.72	0.75	46.3
Approach		276	0.0	0.311	10.4	LOS B	2	0.72	0.75	46.3
R404 N										
7	L	76	0.0	0.423	10.1	LOS B	2	0.64	0.68	46.1
7	T	152	0.0	0.423	10.1	LOS B	2	0.64	0.68	46.1
7	R	220	0.0	0.423	10.1	LOS B	2	0.64	0.68	46.1
Approach		448	0.0	0.422	10.1	LOS B	2	0.64	0.68	46.1
AIRPORT MAIN ACCESS W										
10	L	220	0.0	0.436	9.3	LOS A	2	0.56	0.64	46.7
10	T	76	0.0	0.436	9.3	LOS A	2	0.56	0.64	46.7
10	R	220	0.0	0.436	9.3	LOS A	2	0.56	0.64	46.7
Approach		516	0.0	0.436	9.3	LOS A	2	0.56	0.64	46.7
All Vehicles		1633	0.0	0.436	9.5	LOS A	2	0.63	0.68	46.6

Table 10-1: Weekday PM peak hour summary results of Capacity and Operational Analyses

The upgrading of this intersection to a roundabout will ensure LOS A during the PM Peak Hour in the horizon year. This high level of service indicates that small changes to the assumptions of trip generation (varying areas for warehousing and distribution; addition of limited retail component; hotel or entertainment trips) will not affect the traffic engineering assessment, provided that the infrastructure upgrades are in line with the proposed improvements.

8 Feasibility

The economic feasibility of a facility is normally not a consideration in a traffic impact study. The traffic engineer evaluates the trip generation as per standard rates for successful developments. The risk of the venture lies with the developer. However, as a filling stations is a very specific land use with limited re-development potential, its feasibility may be a consideration for approval.

The financial feasibility of the service station depends on the volumes of fuel sales. To determine the projected average fuel sales for a service station the following calculation is applied:

$$\begin{aligned}\text{Average Monthly Fuel sales} &= \text{Average daily passing traffic} \\ &\quad \times \text{Average trading days per month} \\ &\quad \times \text{Average fill per vehicle} \\ &\quad \times \text{Net Interception rate}\end{aligned}$$

Average daily traffic

A traffic survey was completed at the Provincial Road R404/Airport access road intersection in April 2014. See the results of the survey attached in **Annexure C**. This survey indicates the following average daily traffic volumes of vehicles approaching the intersection on the R404:

R404 – Southbound = 1830 vehicles per day;

R404 – Northbound = 1666 vehicles per day.

The combined average traffic on the northern and southern legs of the intersection is 3496 vehicles per day. The survey further indicates that 1426 vehicles enter the Airport on a daily basis. This number exclusively represents left and right movements from the R404 onto the Airport access road. The remaining 2070 (3496-1426) vehicles travelling on the R404 pass through the intersection without entering the Airport.

A datasheet published by Airports Company South Africa (ACSA) indicates an average annual increase in air travel passengers making use of George Airport since 2014 of 12.2%. Traffic volumes for the turning movements from the R404 onto the Airport access is therefore escalated with 12.2% from 2014 to 2017. The total average daily turning movement from the R404 onto the airport access road is escalated to 2014 vehicles.

The traffic travelling on the R404 not turning into the Airport is increased by 5% per annum. This reflects historical growth in the area. This average daily traffic volume is escalated to 2396 vehicles.

Only vehicles approaching this intersection along the R404 were used for purposes of the financial feasibility of the proposed service station. The total escalated average traffic volume is 4410 (2014+2396) vehicles per day. The traffic approaching the intersection from the Airport was not considered.

Average Fill

An average fill of 28 litres per fill was used for the analysis of the proposed filling station. This fill volume represents the average fill at facilities throughout South Africa. This value is also used by Total South Africa to project future fuel sales.

Interception Rate

In the analysis of the feasibility of a filling station, the interception rate is a critical variable. The interception rate represents the percentage of traffic on the adjacent road that turns into the filling station. The interception rate varies with regards to the type of road, the location of the site, access to the site and competition.

The proposed access to the service station is via the fourth leg of a proposed traffic circle. This access is safe and convenient. There are no competitor sites in the vicinity to the proposed site. The closest competitor site is 7 km from the proposed site in George. The site is ideally situated to service George Airport and particularly car rental refills.

A further important consideration is that the proposed station will service the Herolds Bay, Oubaai, Glentana and local farming communities. These communities currently make use of service stations in George or Groot Brak. These facilities are not conveniently located to serve these communities.

Based on the above considerations a net interception (vehicles re-fuelling) rate of vehicles travelling along the R404 past the proposed service station of between 10% and 15% is expected. A net interception rate of 10.5% will be used for the feasibility calculations. This compares well to net interception rates at facilities under similar conditions.

Expected monthly fuel sales calculation

The calculation of the expected monthly fuel sales for 2014 and 2017 is shown in the table below using the following numbers:

	2014	2017
Traffic passing site	3496	4410
Average Fill	28	28
Net Interception Rate	10.5%	10.5%
Monthly Trading Days	30.42	30.42
Total Fuel	312 630	394 364

The above table indicates an expected monthly fuel sale of 394 364 for 2017. It is commonly accepted in the fuel industry that service stations with monthly fuel sales in excess of 300 000 litres are economically feasible.

The feasibility of the warehousing and distribution developments have been justified in the compilation of the *Gwayang Local Spatial Development Framework (November 2015)* as part of the airport support zone. The actual implementation will be spread out in phases as the demand for such land uses develops. The approval of these land uses are in line with policy and is necessary to establish the development of the airport support zone.

9 Competing filling station applications

A detailed assessment of the merits of the two competing filling station applications is given in Annexure D. The following overview highlights some of the specific aspects and a summary of the comparison is given.

9.1 Proposed development on a portion of Portion 60 of Gwayang 208

The proposed development of a Township for a complex of tourist facilities and service station on the property (which was later designated as Portion 131 after subdivision) was approved with conditions as per a letter E17/2/2/1/AG3 dated 2 August 2005 from the Department of Environmental Affairs and Development Planning Western Cape Province. The location of this filling station would be on the corner of the intersection of R102 and R404. This site would, however, take access from R404 at the airport access via a service road. See the location and service road in Figure 8-1.

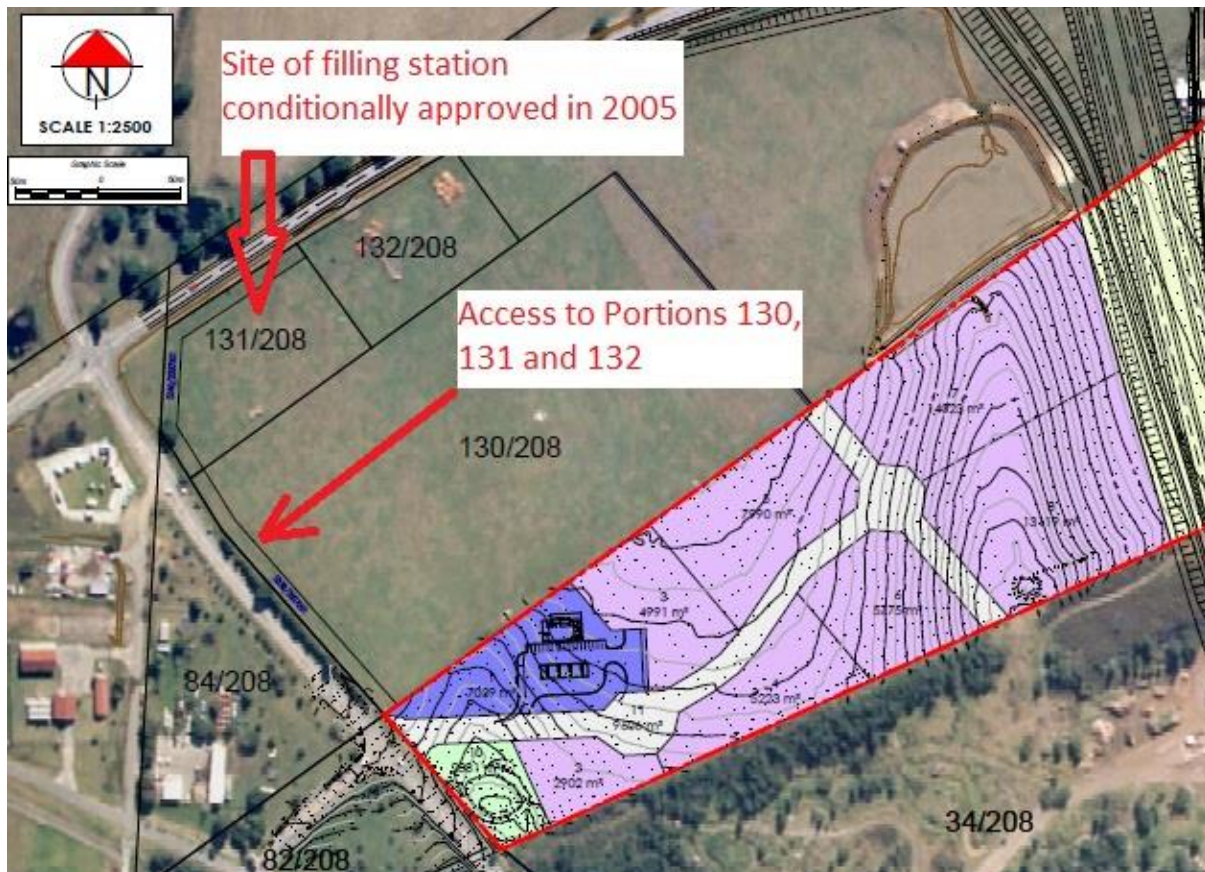


Figure 9-1: Service station application on Portion 131

Based on traffic engineering considerations for filling stations, the site must be conveniently accessible from the pass – by road. This site does not provide such access and would require (again based on traffic engineering considerations) considerable signage to inform, guide and direct potential users to the filling station and facilities. It is therefore not surprising that the site was not developed since 2005 and the approval has lapsed. The access shown as a service road next to the R404 is not good engineering design, as the headlights of vehicles travelling at night will shine from the wrong direction for vehicles driving south on the R404.

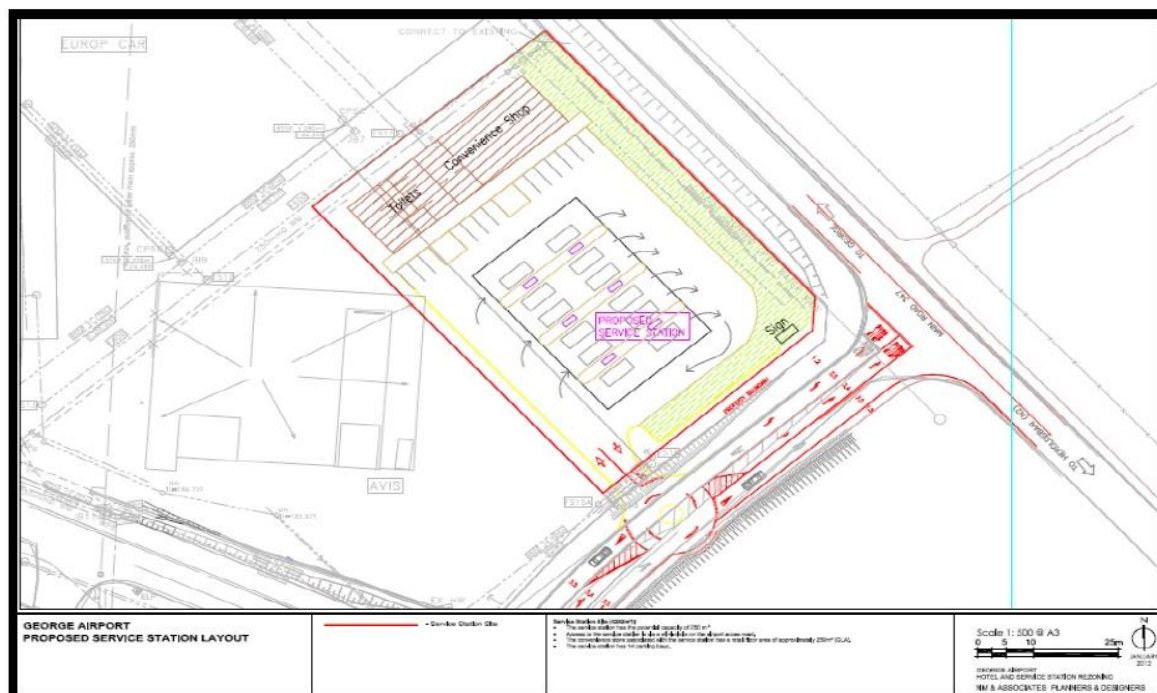
The developer of Portion 4 proposes a collector road as a central spine that serves the eastern end of the development as well as the adjacent land parcels. This is from an engineering point of view a good design that provides throat length for vehicles entering the development and prevent backup of traffic onto the R404.

From a traffic engineering point of view, this application has little merit and chance of development.

9.2 George Airport filling station

The second application is on the site of George Airport, situated on Portions 82 and 84 of Farm Gwayang 208. The following engineering comment is based on proposed layout as presented in the traffic impact study by Sturgeon Consultants dated 2012. The filling station is located on the left-hand side of the airport access road when exiting the airport precinct. The layout by NM Associates & Planners 2012 is shown in Figure 8-2.

FIGURE 3.2: FILLING STATION SITE DEVELOPMENT PLAN



(Source: NM Associates & Planners, 2012)

Source: Sturgeon Consulting Engineers 2012

Figure 9-2: ACSA Filling station layout

The following observations are not meant to criticise the design of another engineer, but illustrates points that were not addressed in the report of 2012.

The site is approximately 48 m deep measured from the R404. The proposed mini-circle is therefore approximately 42 m from the edge of the road reserve. This throat length, considering the peak volumes entering and exiting the airport precinct, could be restrictive and cause delays when drivers returning vehicles want to turn right to fill up. The spacing of the access to the filling station from the R404 as a Class 2R arterial is well below the national and provincial standards. The layout in terms of onsite circulation is reasonable. However, the ingress and egress movements of heavy vehicles from the airport access road will encroach on the opposing travel lanes.

Consideration	Location	Notes	Score
Accessibility	Portion 131	<ul style="list-style-type: none"> Access indirect via development on Portion 4. Detour of 300 m to gain access 	Poor
	Portion 84	<ul style="list-style-type: none"> Access from main Airport access road does not meet sound road planning guidelines. It will be unsafe and will impact on mobility. Access from the road to unscheduled flights may be technically feasible if properly integrated into the road master-plan for the Airport. 	Poor
	Portion 4	<ul style="list-style-type: none"> Access convenient for all road users. Access via traffic circle at location of proposed service station. 	Good
Road safety	Portion 131	<ul style="list-style-type: none"> Access via Portion 4 meets all road safety requirements. 	Good
	Portion 84	<ul style="list-style-type: none"> Access does not meet requirements of TRH 26: South African Classification and Access Management Manual or Road Access Guidelines of the Provincial Administration Western Cape. 	Unacceptable

		<ul style="list-style-type: none"> Impacts negatively on road safety and mobility. Access via road to unscheduled flights may meet requirements of TRH 26 if properly integrated into the road master-plan of the Airport Zone. 	
	Portion 4	<ul style="list-style-type: none"> Access meets provincial, national and international design guidelines. 	Good
Long term development considerations	Portion 131	<ul style="list-style-type: none"> No impact on long term development of Airport and Airport Support Zone. 	Good
	Portion 84	<ul style="list-style-type: none"> Negative impact on future development of Airport road access system. Negative impact on future public transport facilities. 	Unacceptable
	Portion 4	<ul style="list-style-type: none"> No impact on future development of Airport or Airport Support Zone. 	Good
Ability to serve	Portion 131	<ul style="list-style-type: none"> The facility will not be able to serve the market due to indirect access. 	Poor
	Portion 84	<ul style="list-style-type: none"> Ability to serve heavy vehicles poor due to constrained access via mini-circle. Ability to serve vehicles exiting Airport is good through left-in-left-out movement. Ability to serve all other road users is poor due to substandard access along congested road link. Ability to serve all Airport related patrons via access from road leading to unscheduled flights is good. 	Unacceptable
	Portion 4	<ul style="list-style-type: none"> Facility will serve the market well due to properly designed access system in accordance with National 	Good

		and Provincial road design guidelines.	
Impact on long term development of Airport	Portion 131	<ul style="list-style-type: none"> No impact. 	Good
	Portion 84	<ul style="list-style-type: none"> Significant impact on development potential of the Airport due to limited spacing along main access to Airport. Impacts on mobility and road safety along main Airport access and circulation road. 	Unacceptable
	Portion 4	<ul style="list-style-type: none"> No impact. 	Good

10 Improvement Cost (External Services)

The external services cost entails the upgrading of infrastructure, such as outfall sewer connections, storm water and roads. The calculation of the full cost of services will be done as part of the service agreement after proclamation of the land use change. With respect to the road improvements flowing from the traffic impact study, the external service is the construction of the intersection of the development road to the R404.

The proposal is for a medium diameter traffic roundabout, which not only provides the traffic capacity by also defines a gateway to the airport precinct. The estimated cost to the developer is based on similar construction in the order of R 1 million. The road is a provincial road and design proposals and approvals will be for the cost of the developer.

The cost of illuminating the R404 from the R102 to the emergency access (650 m) is estimated to be in the order of R 300 000.

The developer will fund the provision of external services, there after the maintenance is transferred to the appropriate authorities.

11 Engineering Service Contributions

The South African Engineering Service Contribution Manual for Municipal Road Infrastructure, COTO 2012, was issued with: *“The aim of this manual is to establish responsibilities for the provision of municipal road infrastructure required by developments in the Municipality. Every development shall be provided with engineering services, including road infrastructure. Applicants are responsible for the installation and provision of internal services while they are responsible for contributing to the cost of external services.”*

The developers of Portion 4 of Gwayang 208 will be responsible for the internal services. With respect to road, they will provide for the roads, sidewalks and signs and markings per approved design.

The development takes access from a provincial road. Provincial roads are not deemed municipal engineering services (for which engineering service contributions are charged).

No engineering services contributions from external roads are thus applicable.

12 Geometric design considerations

The proposed roundabout on R 404, connecting both the airport access and the access road to the development, is on a straight section of the R 404 with flat topography. There are no horizontal or vertical alignment constraints that will impede sight distances and cause safety issues. The roundabout is

Street lights should be provided from the R101 intersection to the emergency access to the airport, 300 m and 350 m north and south of the roundabout respectively.

13 Conclusion and Recommendations

A development is proposed on Portion 4 of Farm Gwayang No 208. The site is located to the east of the R404 at the George Airport main access road/R404 intersection. The township will include for a Filling Station and Warehousing.

The proposed development will comprise of eight erven. One erf will be zoned Business Zone V for the purpose of a Filling Station, while the other seven erven will be zoned Business Zone IV for the purpose of warehousing. The required land-use rights comply with the *Gwayang Local Spatial Development Framework*.

The properties to the immediate north and south of the proposed development will also receive access via the new township. The future land-use rights for these properties include for Airport Support Zone as stated in the *Gwayang Local Spatial Development Framework*.

There is currently no formal access to the property. Access to the property is proposed via a new single lane roundabout at the R404/ George Airport main access road intersection.

Warehousing and Distribution land-use rights were used to calculate trip generation for the proposed development and neighbouring properties. A filling station is not a primary trip generator since the majority of the total trips generated are passer-by trips that are intercepted from the adjacent road network.

The results of the capacity and operational analyses show that the proposed intersection can easily accommodate the expected additional vehicle trips, not only in terms of the design horizon year (2022), but also when the Airport Support Zone is fully developed for warehousing in the planning horizon year 2035. The upgrading of this intersection to a roundabout will ensure LOS A during the PM Peak Hour in the horizon year.

The planning horizon may include the construction of the George Western Bypass (TR89) that will take through traffic from the R404. The traffic roundabout will then function at an even better level of service.



Annexure B

George Airport passenger volumes

GEORGE AIRPORT - PASSENGER TRAFFIC

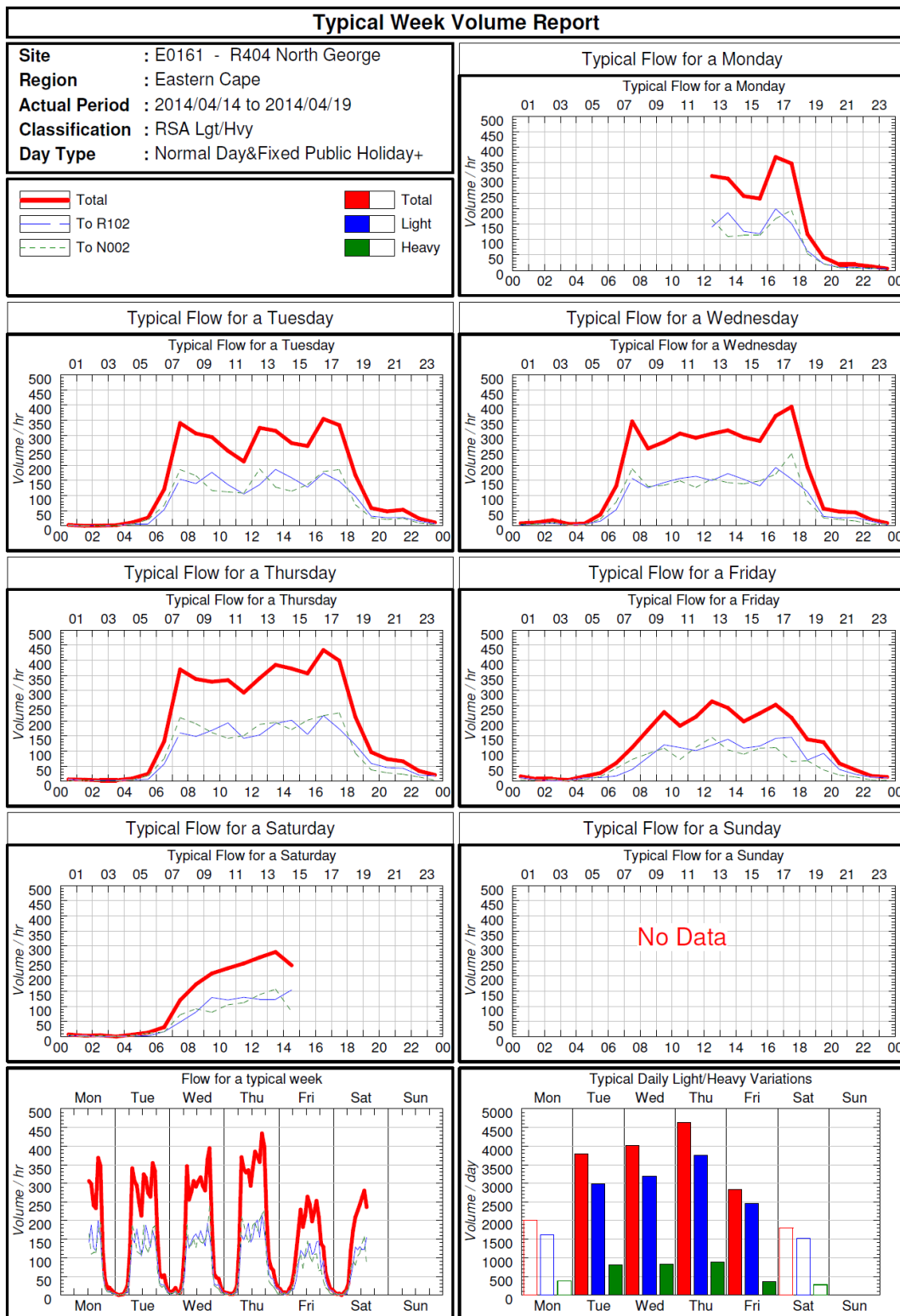
Arrival Passengers							Departure Passengers							Total Passengers						
Domestic	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18	Domestic	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18	Domestic	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
April	23,522	21,063	25,940	30,113	29,468	37,168	April	25,037	24,962	25,913	32,152	31,011	38,166	April	48,559	46,015	51,753	62,265	60,483	75,384
May	19,040	19,016	18,568	23,825	25,732	28,388	May	21,310	21,068	22,555	28,022	29,238	30,256	May	40,350	40,082	41,123	51,837	54,968	58,642
June	18,847	18,964	19,631	23,815	24,347		June	18,343	19,574	20,349	24,264	24,354		June	37,190	38,538	40,080	48,079	48,701	
July	20,353	20,336	22,600	28,556	27,628		July	21,244	21,153	22,867	28,422	28,020		July	41,597	41,469	45,467	56,665	55,848	
August	20,419	21,209	21,120	26,361	27,743		August	20,573	21,034	21,580	26,604	27,668		August	40,962	42,243	43,000	52,965	55,409	
September	22,144	22,401	23,460	26,867	31,433		September	21,714	21,881	23,545	25,961	30,170		September	43,658	44,262	47,005	52,838	61,603	
October	23,009	22,666	26,423	31,413	33,004		October	23,328	22,684	25,372	30,130	33,046		October	46,337	45,620	51,765	61,543	66,050	
November	20,523	22,957	22,881	29,721	29,626		November	20,476	21,770	21,657	28,051	29,027		November	40,969	44,727	44,738	57,772	58,653	
December	32,239	37,466	39,305	43,595	45,815		December	25,060	29,233	30,465	34,266	36,603		December	57,269	65,689	69,770	76,893	82,418	
January	17,531	20,623	22,621	26,018	27,791		January	25,177	29,030	31,524	35,595	36,898		January	42,708	49,653	54,145	61,603	64,888	
February	19,918	22,636	25,973	28,980	28,754		February	19,931	23,546	24,760	28,945	28,393		February	39,849	45,182	50,758	57,925	57,147	
March	26,089	25,065	29,603	33,497	31,531		March	24,383	25,895	29,269	33,077	32,510		March	50,452	50,870	58,878	66,574	64,041	
TOTAL	263,644	274,682	298,236	351,721	363,073	65,584	TOTAL	266,576	279,908	300,276	355,521	366,924	68,442	TOTAL	530,220	554,590	598,512	707,242	730,007	134,026
Arrival Passengers							Departure Passengers							Total Passengers						
Domestic	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18	Domestic	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18	Domestic	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
April	469	763	569	567	318	366	April	490	777	601	635	311	458	April	659	1,540	1,170	1,202	629	854
May	503	752	684	459	320	331	May	499	722	675	471	342	347	May	1,002	1,474	1,359	930	662	678
June	470	646	642	407	334		June	601	659	646	394	319		June	1,071	1,305	1,288	801	653	
July	517	700	915	871	320		July	509	683	927	856	323		July	1,026	1,383	1,842	1,727	643	
August	518	725	853	319	325		August	528	711	845	328	332		August	1,048	1,436	1,688	647	657	
September	483	652	1,002	328	316		September	497	669	989	335	319		September	980	1,321	1,981	663	635	
October	513	1,948	815	684	304		October	553	1,903	813	691	363		October	1,076	3,651	1,628	1,375	667	
November	725	530	622	314	332		November	614	498	589	335	371		November	1,399	1,028	1,211	649	703	
December	459	312	758	1,003	598		December	526	316	684	720	491		December	985	628	1,440	1,723	1,059	
January	757	590	597	262	352		January	791	686	678	362	580		January	1,548	1,276	1,275	624	932	
February	743	574	559	301	296		February	756	635	538	312	420		February	1,499	1,209	1,097	613	716	
March	746	537	604	344	328		March	749	552	573	341	339		March	1,495	1,089	1,177	665	668	
TOTAL	6,903	8,729	8,618	5,859	4,134	727	TOTAL	7,183	8,811	8,598	5,780	4,500	805	TOTAL	14,086	17,540	17,176	11,639	8,634	1,532
Arrival Passengers							Departure Passengers							Total Passengers						
Domestic	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18	Domestic	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18	Domestic	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
April	23,991	21,626	26,499	30,680	29,787	37,594	April	25,527	25,729	26,344	32,787	31,322	38,644	April	48,518	47,555	52,923	63,467	61,109	76,238
May	19,543	19,788	19,252	24,254	26,052	28,717	May	21,809	21,788	23,320	28,503	29,578	30,603	May	41,352	41,556	42,452	52,767	55,630	59,320
June	19,317	19,610	20,473	24,222	24,681		June	18,944	20,233	20,865	24,658	24,673		June	38,261	39,843	41,368	48,880	49,354	
July	20,870	21,036	23,515	29,407	29,148		July	21,753	21,836	23,794	29,278	28,343		July	42,623	42,872	47,369	58,665	58,491	
August	20,937	21,934	21,373	26,680	28,098		August	21,101	21,745	22,725	26,932	27,668		August	42,038	43,679	44,698	53,612	56,098	
September	22,627	23,053	24,462	27,165	31,749		September	22,211	22,550	24,534	26,296	30,459		September	44,838	45,603	48,986	53,491	62,238	
October	23,522	24,604	27,288	32,097	33,308		October	23,891	24,767	26,165	30,621	33,409		October	47,413	48,671	53,423	62,918	66,717	
November	21,248	23,487	23,903	30,035	29,958		November	21,150	22,268	22,466	28,386	29,398		November	42,398	45,755	45,949	58,421	59,358	
December	32,668	37,788	40,061	43,598	46,403		December	25,586	29,549	31,149	35,018	37,084		December	58,264	68,317	71,210	78,916	83,487	
January	18,288	21,213	23,218	26,280	28,143		January	25,968	29,716	32,002	35,947	37,478		January	44,256	50,929	55,420	62,227	65,621	
February	20,661	23,210	26,537	29,281	29,050		February	20,667	23,181	25,316	29,617	28,813		February	41,348	46,391	51,855	58,538	57,863	
March	26,845	25,602	30,213	33,841	31,660		March	25,132	29,357	29,842	33,418	32,849		March	51,977	51,959	60,055	67,259	64,709	
TOTAL	270,547	283,411	306,554	357,586	367,207	66,311	TOTAL	273,759	288,719	308,832	361,301	371,434	69,247	Grand Total	544,306	572,130	615,668	718,891	738,641	135,558
														TOT %CHG	5.1%	5.1%	7.5%	16.8%	2.7%	
														YTD	90,870	89,111	95,465	116,234	116,739	135,558
														YTD %CHG		-1.9%	7.1%	21.8%	0.4%	

Annexure C Traffic counting data R 404 and George Airport Road

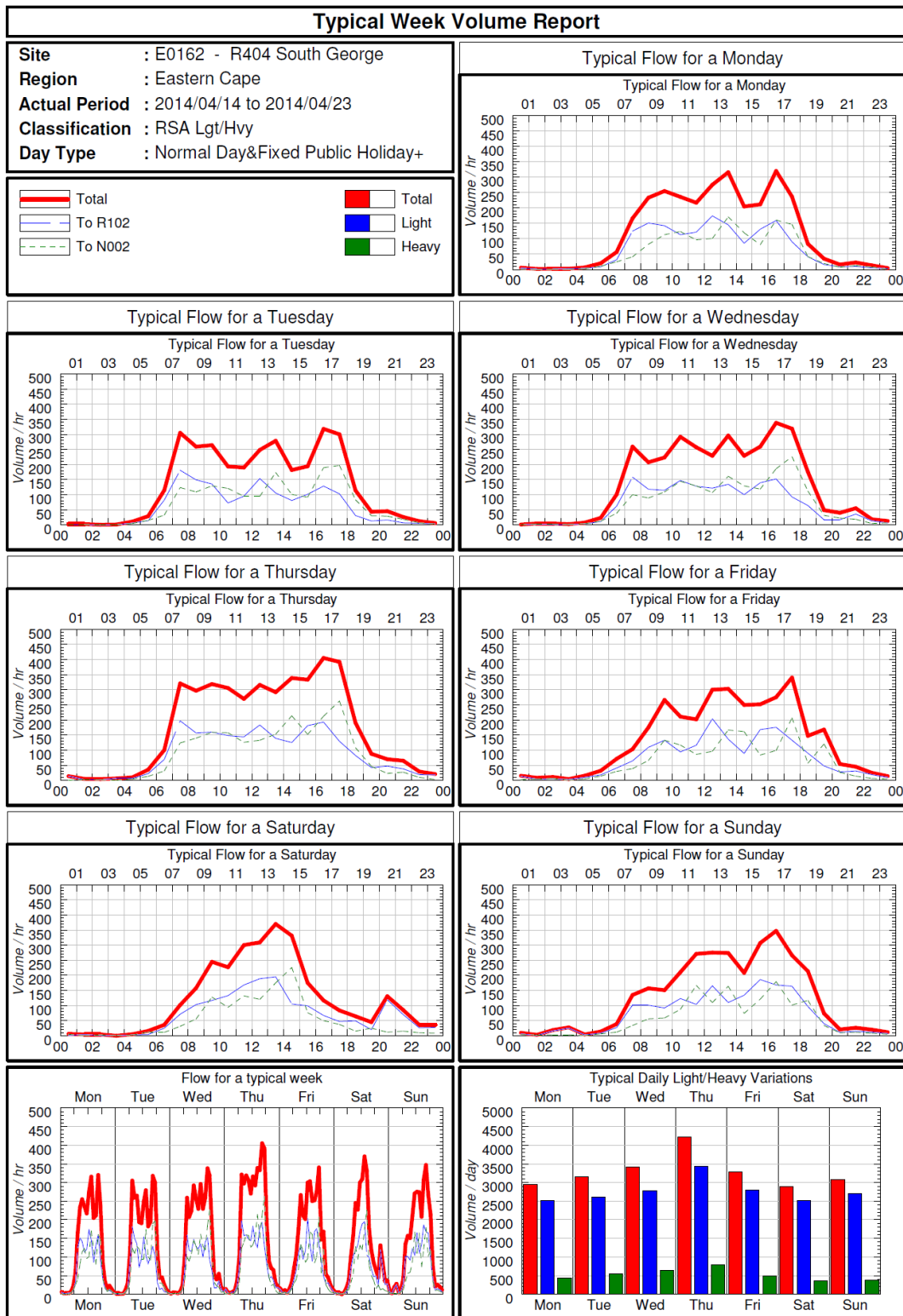
E0161

R404 North George

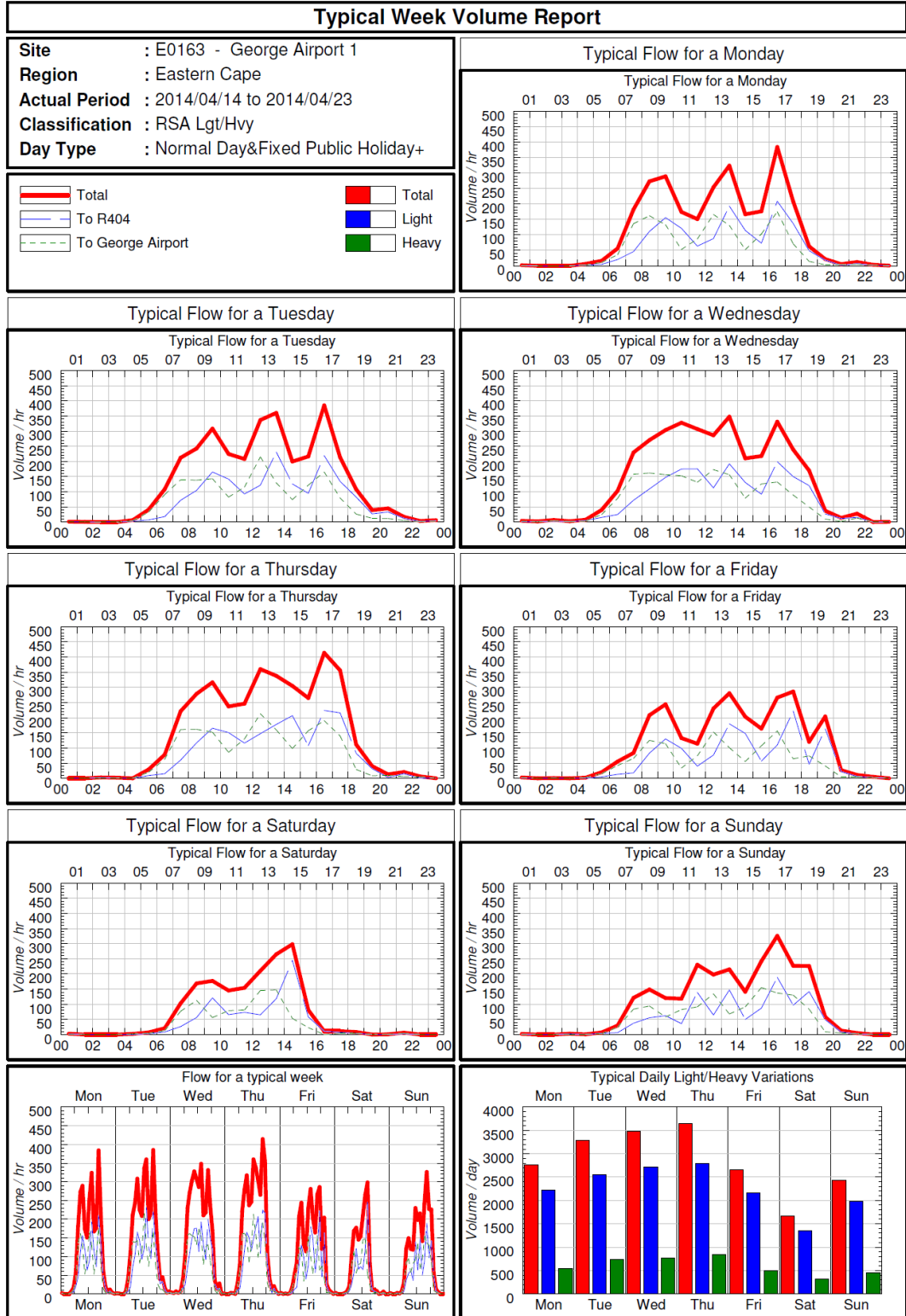
TRAFFIC HIGHLIGHTS OF SITE E0161			
1.1	Site Identifier	E0161	
1.2	Site Name	R404 North George	
1.3	Site Description	R404 North George Airport	
1.4	Road Description	Route : R404 Road : Section : Distance : 0.0km	
1.5	GPS Position	22.382200E -33.998169S	
1.6	Number of Lanes	2	
1.7	Station Type	Secondary (Temp)	
1.8	Requested Period	2014/01/01 - 2014/12/31	
1.9	Length of record requested (hours)	8760	
1.10	Actual First & Last Dates	2014/04/14 - 2014/04/19	
1.11	Actual available data (hours)	124	
1.12	Percentage data available for requested period	1.4	
		To R102	To N002
2.1	Total number of vehicles	9810	9435
2.2	Average daily traffic (ADT)	1903	1830
2.3	Average daily truck traffic (ADTT)	333	361
2.4	Percentage of trucks	17.5	19.7
2.5	Truck split % (short:medium:long)	0 : 0 : 0	0 : 0 : 0
2.6	Percentage of night traffic (20:00 - 06:00)	5.3	4.3
3.1	Speed limit (km/hr)	80	
3.2	Average speed (km/hr)		
3.3	Average speed - light vehicles (km/hr)		
3.4	Average speed - heavy vehicles (km/hr)		
3.5	Average night speed (km/hr)		
3.6	15th centile speed (km/hr)		
3.7	85th centile speed (km/hr)		
3.8	Percentage vehicles in excess of speed limit	0.0	0.0
4.1	Percentage vehicles in flows over 600 vehicles/hr	0.0	0.0
4.2	Highest volume on the road (vehicles/hr)	2014/04/17 17:00:00	434
4.3	Highest volume in the North (vehs/hr)	2014/04/17 17:00:00	217
4.4	Highest volume in the South (vehs/hr)	2014/04/16 18:00:00	239
4.5	Highest volume in a lane (vehicles/hr)	2014/04/16 18:00:00	239
4.6	15th highest volume on the road (vehicles/hr)	2014/04/17 09:00:00	338
4.7	15th highest volume in the North direction (vehs/hr)	2014/04/17 08:00:00	160
4.8	15th highest volume in the South direction (vehs/hr)	2014/04/17 15:00:00	171
4.9	30th highest volume on the road (vehicles/hr)	2014/04/16 12:00:00	291
4.10	30th highest volume in the North direction (vehs/hr)	2014/04/16 10:00:00	143
4.11	30th highest volume in the South direction (vehs/hr)	2014/04/16 15:00:00	139
5.1	Percentage of vehicles less than 2s behind vehicle ahead		
6.1	Total number of heavy vehicles	1717	1860
6.2	Estimated average number of axles per truck		
6.3	Estimated truck mass (Ton/truck)		
6.4	Estimated average E80/truck		
6.5	Estimated daily E80 on the road		
6.6	Estimated daily E80 in the North direction		
6.7	Estimated daily E80 in the South direction		
6.8	Estimated daily E80 in the worst North lane	0	
6.9	Estimated daily E80 in the worst South lane	0	
6.10	ASSUMPTION on Axles/Truck (Short:Medium:Long)	(2.0 : 5.0 : 7.0)	
6.11	ASSUMPTION on Mass/Truck (Short:Medium:Long)	(10.9 : 31.5 : 39.8)	
6.12	ASSUMPTION on E80s/Truck (Short:Medium:Long)	(0.6 : 2.5 : 2.1)	



TRAFFIC HIGHLIGHTS OF SITE E0162				
1.1	Site Identifier	E0162		
1.2	Site Name	R404 South George		
1.3	Site Description	R404 South George Airport		
1.4	Road Description	Route : R404 Road : Section : Distance : 0.0km		
1.5	GPS Position	22.384180E -34.000000S		
1.6	Number of Lanes	2		
1.7	Station Type	Secondary (Temp)		
1.8	Requested Period	2014/01/01 - 2014/12/31		
1.9	Length of record requested (hours)	8760		
1.10	Actual First & Last Dates	2014/04/14 - 2014/04/23		
1.11	Actual available data (hours)	216		
1.12	Percentage data available for requested period	2.5		
		To R102	To N002	
2.1	Total number of vehicles	14955	14160	29115
2.2	Average daily traffic (ADT)	1666	1577	3243
2.3	Average daily truck traffic (ADTT)	270	247	517
2.4	Percentage of trucks	16.2	15.7	15.9
2.5	Truck split % (short:medium:long)	0 : 0 : 0	0 : 0 : 0	0 : 0 : 0
2.6	Percentage of night traffic (20:00 - 06:00)	6.6	4.4	5.5
3.1	Speed limit (km/hr)	80		
3.2	Average speed (km/hr)			
3.3	Average speed - light vehicles (km/hr)			
3.4	Average speed - heavy vehicles (km/hr)			
3.5	Average night speed (km/hr)			
3.6	15th centile speed (km/hr)			
3.7	85th centile speed (km/hr)			
3.8	Percentage vehicles in excess of speed limit	0.0	0.0	0.0
4.1	Percentage vehicles in flows over 600 vehicles/hr	0.0	0.0	0.0
4.2	Highest volume on the road (vehicles/hr)	2014/04/17 17:00:00		405
4.3	Highest volume in the North (vehs/hr)	2014/04/18 13:00:00		204
4.4	Highest volume in the South (vehs/hr)	2014/04/17 18:00:00		263
4.5	Highest volume in a lane (vehicles/hr)	2014/04/17 18:00:00		263
4.6	15th highest volume on the road (vehicles/hr)	2014/04/17 10:00:00		319
4.7	15th highest volume in the North direction (vehs/hr)	2014/04/14 17:00:00		172
4.8	15th highest volume in the South direction (vehs/hr)	2014/04/15 17:00:00		177
4.9	30th highest volume on the road (vehicles/hr)	2014/04/17 14:00:00		292
4.10	30th highest volume in the North direction (vehs/hr)	2014/04/15 09:00:00		151
4.11	30th highest volume in the South direction (vehs/hr)	2014/04/23 11:00:00		147
5.1	Percentage of vehicles less than 2s behind vehicle ahead			
6.1	Total number of heavy vehicles	2426	2217	4643
6.2	Estimated average number of axles per truck			
6.3	Estimated truck mass (Ton/truck)			
6.4	Estimated average E80/truck			
6.5	Estimated daily E80 on the road			
6.6	Estimated daily E80 in the North direction			
6.7	Estimated daily E80 in the South direction			
6.8	Estimated daily E80 in the worst North lane	0		
6.9	Estimated daily E80 in the worst South lane	0		
6.10	ASSUMPTION on Axles/Truck (Short:Medium:Long)	(2.0 : 5.0 : 7.0)		
6.11	ASSUMPTION on Mass/Truck (Short:Medium:Long)	(10.9 : 31.5 : 39.8)		
6.12	ASSUMPTION on E80s/Truck (Short:Medium:Long)	(0.6 : 2.5 : 2.1)		



TRAFFIC HIGHLIGHTS OF SITE E0163			
1.1	Site Identifier	E0163	
1.2	Site Name	George Airport 1	
1.3	Site Description	George Airport Entrance	
1.4	Road Description	Route : Road : Section : Distance : 0.0km	
1.5	GPS Position	22.382469E -33.999100S	
1.6	Number of Lanes	2	
1.7	Station Type	Secondary (Temp)	
1.8	Requested Period	2014/01/01 - 2014/12/31	
1.9	Length of record requested (hours)	8760	
1.10	Actual First & Last Dates	2014/04/14 - 2014/04/23	
1.11	Actual available data (hours)	215	
1.12	Percentage data available for requested period	2.5	
		To R404	To George Airport
2.1	Total number of vehicles	13479	12776
2.2	Average daily traffic (ADT)	1505	1426
2.3	Average daily truck traffic (ADTT)	275	338
2.4	Percentage of trucks	18.3	23.7
2.5	Truck split % (short:medium:long)	0 : 0 : 0	0 : 0 : 0
2.6	Percentage of night traffic (20:00 - 06:00)	2.4	2.7
3.1	Speed limit (km/hr)	80	
3.2	Average speed (km/hr)		
3.3	Average speed - light vehicles (km/hr)		
3.4	Average speed - heavy vehicles (km/hr)		
3.5	Average night speed (km/hr)		
3.6	15th centile speed (km/hr)		
3.7	85th centile speed (km/hr)		
3.8	Percentage vehicles in excess of speed limit	0.0	0.0
4.1	Percentage vehicles in flows over 600 vehicles/hr	0.0	0.0
4.2	Highest volume on the road (vehicles/hr)	2014/04/17 17:00:00	414
4.3	Highest volume in the East (vehs/hr)	2014/04/19 15:00:00	245
4.4	Highest volume in the West (vehs/hr)	2014/04/15 13:00:00	225
4.5	Highest volume in a lane (vehicles/hr)	2014/04/19 15:00:00	245
4.6	15th highest volume on the road (vehicles/hr)	2014/04/16 17:00:00	331
4.7	15th highest volume in the East direction (vehs/hr)	2014/04/23 11:00:00	189
4.8	15th highest volume in the West direction (vehs/hr)	2014/04/17 09:00:00	162
4.9	30th highest volume on the road (vehicles/hr)	2014/04/18 18:00:00	286
4.10	30th highest volume in the East direction (vehs/hr)	2014/04/17 11:00:00	151
4.11	30th highest volume in the West direction (vehs/hr)	2014/04/19 13:00:00	145
5.1	Percentage of vehicles less than 2s behind vehicle ahead		
6.1	Total number of heavy vehicles	2461	3029
6.2	Estimated average number of axles per truck		
6.3	Estimated truck mass (Ton/truck)		
6.4	Estimated average E80/truck		
6.5	Estimated daily E80 on the road		
6.6	Estimated daily E80 in the East direction		
6.7	Estimated daily E80 in the West direction		
6.8	Estimated daily E80 in the worst East lane	0	
6.9	Estimated daily E80 in the worst West lane	0	
6.10	ASSUMPTION on Axles/Truck (Short:Medium:Long)	(2.0 : 5.0 : 7.0)	
6.11	ASSUMPTION on Mass/Truck (Short:Medium:Long)	(10.9 : 31.5 : 39.8)	
6.12	ASSUMPTION on E80s/Truck (Short:Medium:Long)	(0.6 : 2.5 : 2.1)	



Annexure D

Comparison between alternative filling station locations

D1 Introduction

Eight Mile Investments 236 (Pty) Ltd is planning the development of Portion 4 of the Farm Gwayang No 208. The proposed development includes the development of a fuel service station.

There are two competing proposals for service stations in the immediate vicinity of the proposed service station. These facilities are located on Portion 131 and Portion 84 of the Farm Gwayang. The first mentioned site is located on the south-eastern quadrant of the intersection of provincial roads R102 and R404. The other site is located on the north-western quadrant of the R404 and the Airport access road intersection.

D2 Purpose

The purpose of this annexure is to evaluate the technical feasibility of the competing facilities as well as to compare the economic feasibility of alternative locations. The annexure therefore considers the potential of the three sites to serve the needs of road users and the local community including the Airport, other commercial land uses such as the quarry and various nurseries, residential areas such as Herolds Bay and Glentana as well as the farming community between George and Groot Brak.

D3 Methodology

In order to meet the mentioned purpose this document reports on the outcome of the following considerations:

- Impact of the alternatives on the local traffic and access to the Airport;
- Potential of alternatives to optimally serve the local market;
- Potential of the alternatives to serve the Airport Node.

The methodology used is to study all relevant planning documents for the area. These documents include the Spatial Development Framework for George as well as the Local Spatial Development Framework for the Gwayang area, local provincial road planning and development planning of the Airport Precinct. These documents provide detail on the planning framework within which Portion 4 should be integrated in order to ensure optimal benefits of future developments for the larger community as well as local stakeholders.

The Gwayang Local Spatial Development Framework refers to the Airport as Airport Zone and the land immediately to the east of the Airport as Airport Support Zone. This report makes use of this

terminology. The drawing attached in Figure A shows the Airport Zone marked in grey and the Airport Support Zone marked in dark blue.

The drawings used as figures were provided by Infrastructure Consulting Engineers (ICE), design engineers for the development.

D4 Traffic impacts

D4.1 Provincial road planning

Provincial road planning in the immediate vicinity of the Airport has a significant impact on the development of the Airport and Airport Support Zones. The drawing attached as Figure B shows detail of road planning in the Gwayang area. The proposed re-alignment of R404 as indicated on the drawing, has a major impact on the development planning of the mentioned zones. Access to land bordering the R404 and the R102 in the immediate area of the intersection of the two roads, is prohibited in terms of road planning. Lines of no access apply along the mentioned roads as shown on the development layout planning drawing attached in Figure C.

The road planning effectively limits access to the Airport Support Zone to the current intersection along the R404 where the Airport currently exclusively gains access to the major road network. At present this is a three legged at grade intersection. A fourth eastern leg to be added to the intersection will provide access to the Airport Support Zone.

D4.2 Impact on access to proposed service station or Portion 131

Resulting from the mentioned proclaimed provincial road planning, access to any possible service station at the south-eastern quadrant of the R102/R404 intersection is prohibited from both the R102 or the R404. Access to any development on this land will be via the internal road system of the proposed development on Portion 4. This indirect access to a potential service station renders the service station not feasible. Service stations are competing on the basis of convenience. This access arrangement results in a detour of approximately 300 m to gain access. This renders the site not financially feasible.

D4.3 Access to proposed service station on Portion 84

The proposed service station on ACSA land at the intersection of the main airport access road and provincial road R404 is proposed to take access from the main airport access and distribution road. The drawing attached in Figure D shows the proposed facility layout. The proposed access to the service station is via a mini-circle at a distance of approximately 60m from the main access intersection on the R404.

TRH 26: South African Classification and Access Management Manual, was compiled under the auspices of the Road Coordinating Body of the Committee of Transport Officials. This document provides guidance to national, provincial and municipal spheres of government on the functional classification of roads as well as how roads must be managed in order to function effectively.

In terms of TRH 26 provincial road R404 can be classified as a Class R2 rural road. Similarly, the main access road to the Airport is classified as a Class 4 road. In order to function effectively TRH 26 advises that intersections along Class 4 roads should be spaced at minimum distance of 150 m. (*Road Access Guidelines of the Provincial Administration Western Cape* advises a minimum spacing of 120 m.) This spacing requirement is proposed with specific reference to mobility and road safety considerations.

In contrast with the mentioned spacing requirements, the distance between the existing main access intersection to the Airport and the proposed intersection giving solely access to the proposed service station, is merely 60 m. See layout drawing in Figure E for spacing. The existing spacing between the main access intersection and the first intersection inside the Airport (to unscheduled flights) is 120 m. This existing condition does not meet the spacing requirements of TRH 26 of 150 m. It is therefore not in the interest of sound road management, mobility and road safety to add a further intersection on this road link at a spacing of merely 60 m to the main intersection on the R404 where the airport gains access.

Drawings in Figure F show the consequences of the turning manoeuvres of a large truck moving to and from the proposed service station onto the Airport main access road. The truck has to ignore the traffic circle as proposed by ACSA. This movement results in unsafe conflicts between the vehicle attempting to gain access to the service station and vehicles entering or leaving the Airport. This impact is merely one of several unacceptable impacts if spacing requirements proposed by TRH 26 are ignored.

Access from the road leading to unscheduled flights to the proposed service station on Portion 84 may however be possible. The drawing attached in Figure G shows the schematic layout to the proposed service station with access from the road to unscheduled flights. This possible solution will be subject to a detailed traffic engineering analysis and will have to be integrated into the road master plan for the Airport.

D5 Current problems experienced at the Airport access intersection

Access to the Airport is currently already problematic. The queue formation at the intersection is significant. The photo below was taken on 18 February 2017. It shows traffic queuing along the Airport approach. The queue stretches beyond the proposed traffic circle giving access to the service station on ACSA land.



Congestion at the Airport access and the resulting queue length will increase as the Airport passenger throughput increases. The limited frontage length of the proposed ACSA service station therefore warrants the development of a site at that location undesirable.

A further significant safety risk results from the lack of pedestrian facilities along the main Airport access and circulation road. This results in pedestrians walking in the basic lanes of the main Airport access and circulation road. The photo below shows a pedestrian walking along the Airport main access and circulation road in the vicinity of the proposed mini-circle to give access to the ACSA service station on Portion 84.



The congestion at the R404 intersection with queue formation and pedestrian movements combined with the limited access spacing proposed by ACSA contributes to road safety risks and mobility constraints.

D6 Public transport facilities

The Gwayang Local Spatial Development Framework specifically addresses the lack of public transport facilities at the Airport. The photo below shows an airport traveller approaching the Airport main building on foot after being dropped off at the main access intersection at the R404. It confirms the need for public transport not only for workers at the Airport but also airport passengers.

The road edge of the airport main access and circulation road (approaching the R404 from the Airport) provides an opportunity to provide a public transport layby. A layby in this position will be ideal for workers at the Airport Precinct.



The proposed mini-circle to give access to the proposed ACSA service station will make this option impossible.

D7 Access to proposed service station on Portion 4

Access to the proposed facility on Portion 4 is in accordance with the requirements of TRH 26 and the Road Access Guidelines of the Provincial Administration Western Cape. It will consequently have no adverse impacts on the road network. The proposed service station will have no impact on accessibility of the Airport. Refer to the drawing in Figure C for more detail.

D8 Serving the needs of road users

Background

A service station at the Airport or Airport Support Zone will serve transient traffic along R102 and R404. It will also serve local traffic generated by the Airport, future Airport Support Zone, commercial land uses such as nurseries and the quarry, residential areas such as Glentana, Herolds Bay, Oubaai and Fancourt as well as the local farming community between Groot Brak and George. The current east to west spacing of service stations between the service station in Groot Brak and the service stations in George is approximately 21 km. The residential, commercial and farming communities in this area is therefore poorly serviced.

Travellers returning hired vehicles to car hire operators at the Airport, will also make use of this facility. Some of the car hire companies will also utilise the facility.

The accessibility of the three alternative positions proposed for a service station must be evaluated with the potential market to be served in mind.

D8.1 Access to Portion 131

Access to the proposed facility on Portion 131 is indirect and inconvenient. It will be via the internal road system to be developed on Portion 4. This is inappropriate for the mentioned market segments. It is also inappropriate to route external traffic to a service station at that location via the internal road system of the proposed development on Portion 4. A service station in this location will therefore poorly serve the larger community.

D8.2 Access to Portion 84

A service station on Portion 84 is ideally located to serve traffic leaving the Airport. It will merely require a left-in and left-out manoeuvre. All other patrons will have to make right turn manoeuvres to enter the service station. This includes all vehicles entering the Airport as well as vehicles attracted from the R404 or R102. These right turn manoeuvres will be inconvenient and dangerous due to the limited spacing to adjacent intersections and congestion along this road link.

Accessing this site will be inconvenient for heavy vehicles. The large vehicle movement tracking as indicated on the attached drawing clearly points to the inconvenient access arrangement at this location. It is clear that the access will be ideal for a small section of the market, but inconvenient and dangerous for all other potential patrons.

The Gwayang Spatial Development Framework advocates facilities to be developed on ACSA land to relate to the basic functions of the Airport. A service station serving the larger community between Groot Brak and George is clearly not a basic function of the Airport.

The mandate of ACSA is to develop gateway precincts with associated commercial activities. It goes beyond the mandate of ACSA to compete with other service providers to provide for the non-airport related needs of the larger community between Groot Brak and George.

For reasons of road safety, mobility and proper planning the service station to be developed on Portion 84 can only gain access from the road leading to unscheduled roads. With an access in that location the service station will primarily serve airport related activities. It is ideally located to serve car hire companies and their patrons. A service station developed in this manner will also comply with the mandate of ACSA.

D8.3 Access to Portion 4

Access to the proposed facility on Portion 4 meets all road design guidelines and will be convenient for all road users attracted from the R404, R102 and the Airport.

D9 Airport – importance and future development potential

The Gwayang Local Spatial Development Framework dated November 2015 forms part of the George SDF. The document states: *"George Airport plays a significant role in the Southern Cape's tourism industry and whether directly or indirectly, creates and supports jobs and economic growth for the George area "* and *"Efficient airports are an essential part of the transport networks that all successful modern economies rely on. The George Airport is a crucial transport hub for the Southern Cape. As demand for travel increases, modern economies expect and demand a range of services and facilities at these transport hubs to improve their travel experience and to support their businesses. The George Airport is continuously improving on the service they render, which will also contribute to the development of the Southern Cape economy."*

It is further relevant to consider the rapid growth rate of George Airport. According to data published by Airports Company South Africa (ACSA) an average annual growth rate of 8.1% for passengers was noticed from 2013 to 2017. This rapid growth rate is adding substantial pressure on the existing airport facilities. Passengers making use of the Airport is currently approximately 750 000 per annum.

In his State of the Nation Address of 16 February 2018 President Ramaphosa specifically mentioned the critical role to be played by tourism and the potential doubling of tourism in South Africa. In the interest of the future development of the Southern Cape's tourism industry it is important to plan the Airport with due allowance for future expansions. This Airport will continue to play an important role in the economy of the region.

It is unthinkable to jeopardise the long-term convenience, capacity and safety of the Airport road access system in lieu of the development of a petrol service station. The service station can be provided without any impact on the future development of the Airport within the proposed development of Portion 4.

D10 Conclusion and recommendations

Based on the current road and spatial planning of the Gwayang area that includes the Airport, the Airport Support Zone and the local residential, commercial and farming areas, it is clear that a service station must be developed on Portion 4. A service station serving the Airport with safe access from the road leading to unscheduled flights is also technically feasible and within the mandate of ACSA.

The following table summarises the conclusions as discussed above.

Consideration	Location	Notes	Score
Accessibility	Portion 131	Access indirect via development on Portion 4. Detour of 300 m to gain access	Poor
	Portion 84	Access from main Airport access road does not meet sound road planning guidelines. It will be unsafe and will impact on mobility. Access from the road to unscheduled flights may be technically feasible if properly integrated into the road master-plan for the Airport.	Poor
	Portion 4	Access convenient for all road users. Access via traffic circle at location of proposed service station.	Good
Road safety	Portion 131	Access via Portion 4 meets all road safety requirements.	Good
	Portion 84	Access does not meet requirements of TRH 26: South African Classification and Access Management Manual or Road Access Guidelines of the Provincial Administration Western Cape. Impacts negatively on road safety and mobility. Access via road to unscheduled flights may meet requirements of TRH 26 if properly integrated into the road master-plan of the Airport Zone.	Unacceptable
	Portion 4	Access meets provincial, national and international design guidelines.	Good
Long term development considerations	Portion 131	No impact on long term development of Airport and Airport Support Zone.	Good
	Portion 84	Negative impact on future development of Airport road access system. Negative impact on future public transport facilities.	Unacceptable
	Portion 4	No impact on future development of Airport or Airport Support Zone.	Good
Ability to serve	Portion 131	The facility will not be able to serve the market due to indirect access.	Poor
	Portion 84	Ability to serve heavy vehicles poor due to constrained access via mini-circle. Ability to serve vehicles exiting Airport is good through left-in-left-out movement.	Unacceptable

		Ability to serve all other road users is poor due to substandard access along congested road link. Ability to serve all Airport related patrons via access from road leading to unscheduled flights is good.	
	Portion 4	Facility will serve the market well due to properly designed access system in accordance with National and Provincial road design guidelines.	Good
Impact on long term development of Airport	Portion 131	No impact.	Good
	Portion 84	Significant impact on development potential of the Airport due to limited spacing along main access to Airport. Impacts on mobility and road safety along main Airport access and circulation road.	Unacceptable
	Portion 4	No impact.	Good

The proposed location for the development of a service station on Portion 131 is not acceptable due to poor and inconvenient access via the proposed internal road system of Portion 4.

The proposed ACSA facility on Portion 84 is flawed due to the non-compliance of the proposed access mini-circle with national and provincial road design guidelines. Access via the road to unscheduled flights is however acceptable and will serve Airport related land uses.

The proposed facility on Portion 4 will meet all the road access requirements and will optimally serve the local market, including the residential, farming and commercial land uses.

Figure A

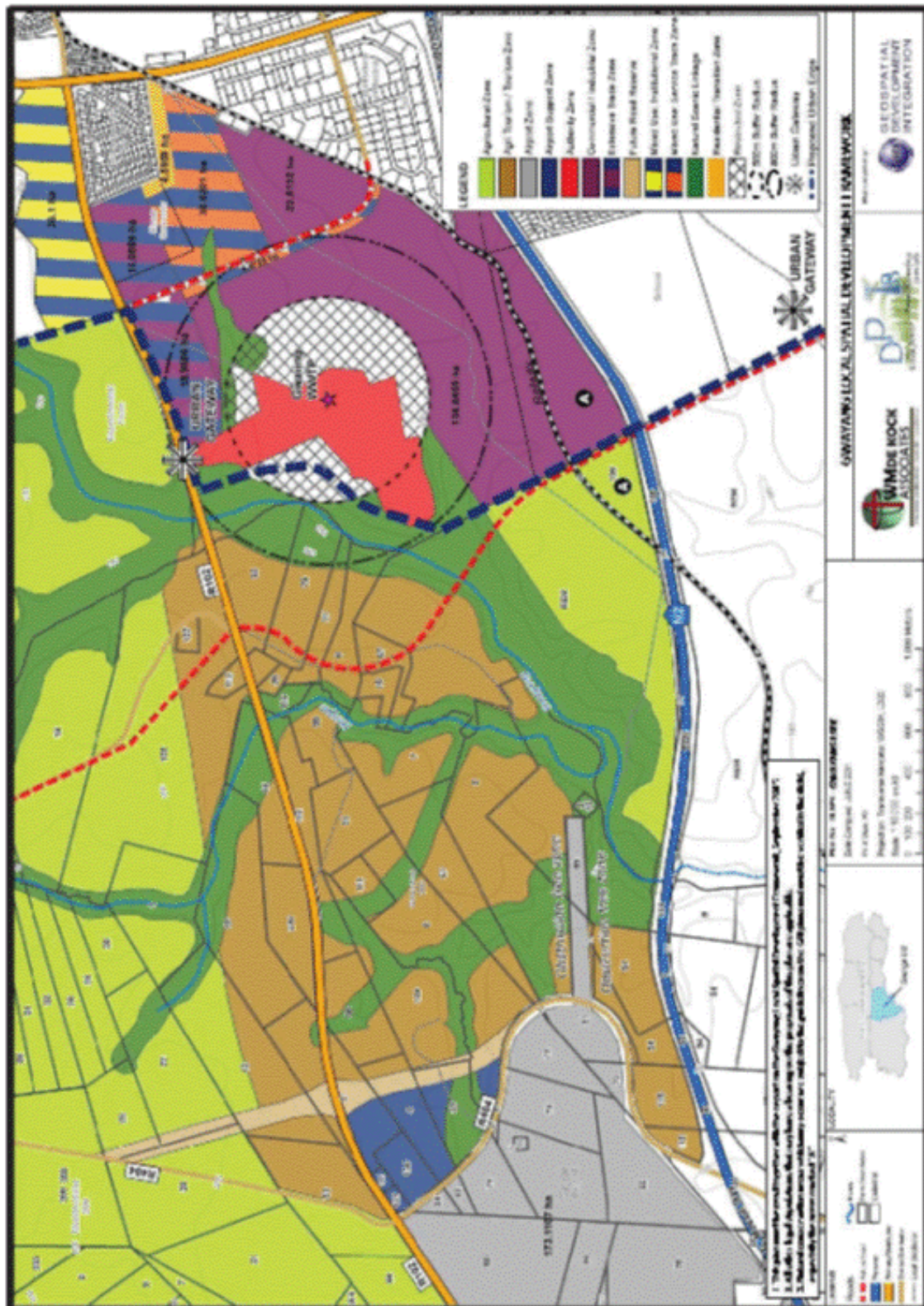


Figure B

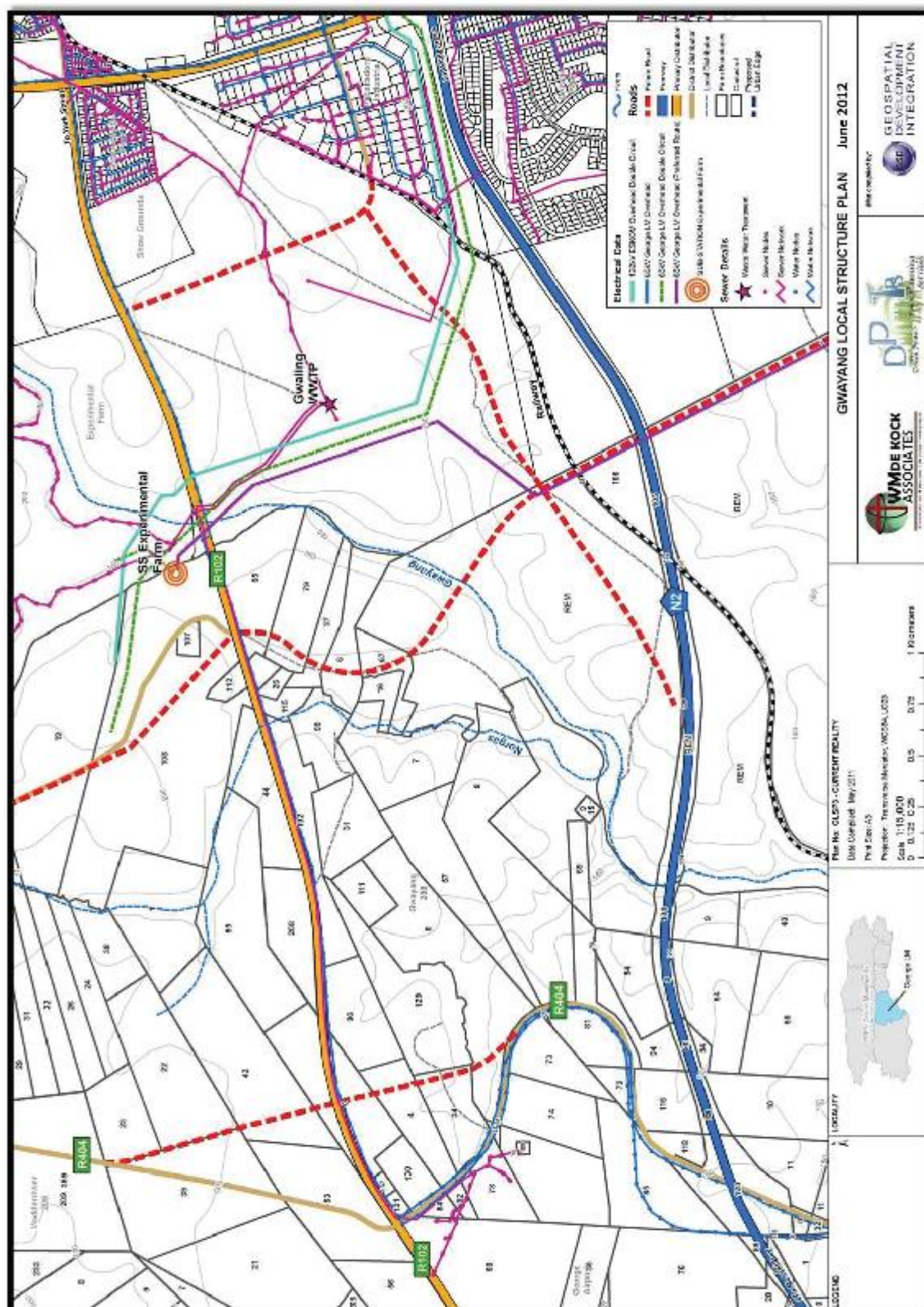


Figure C

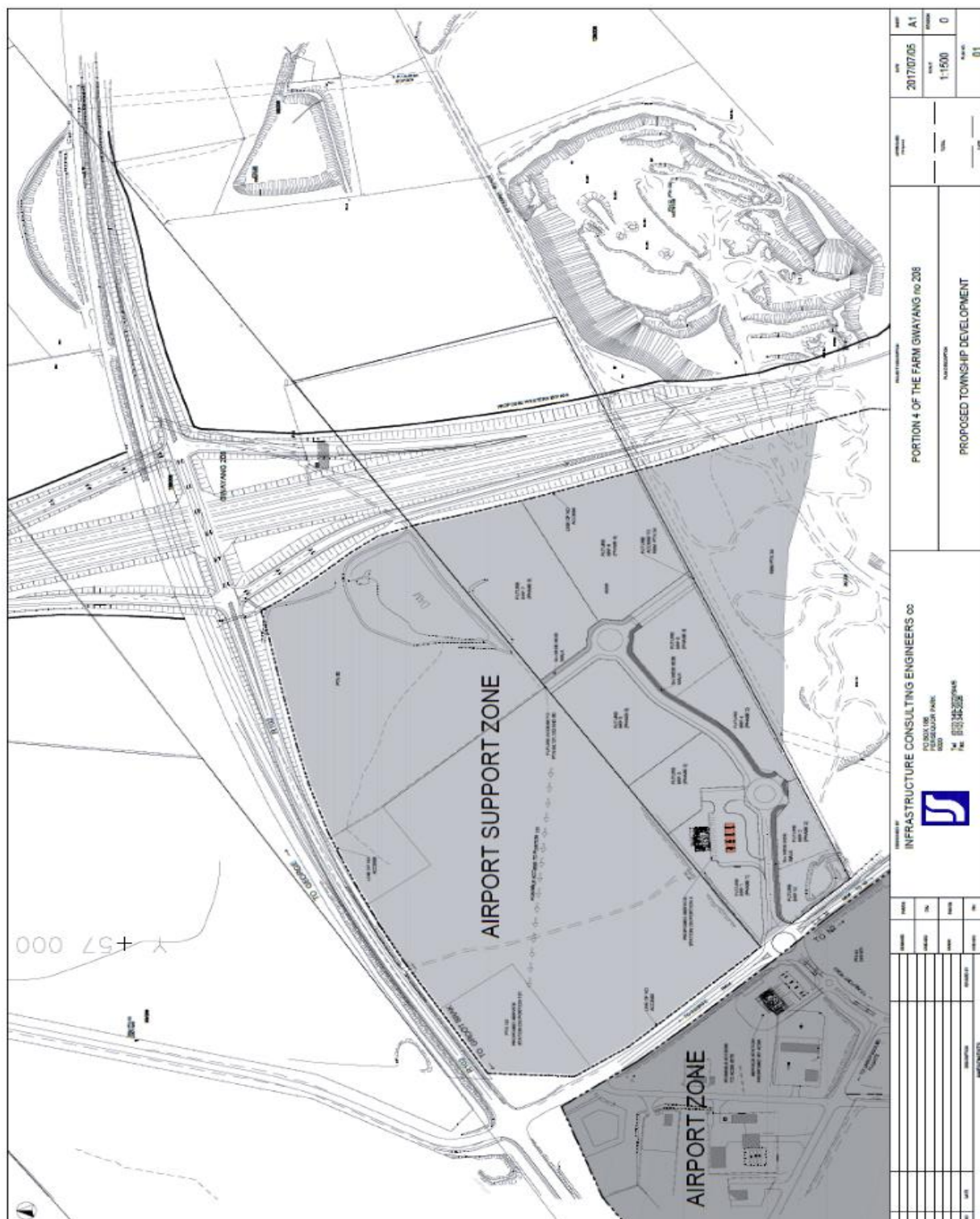


Figure D

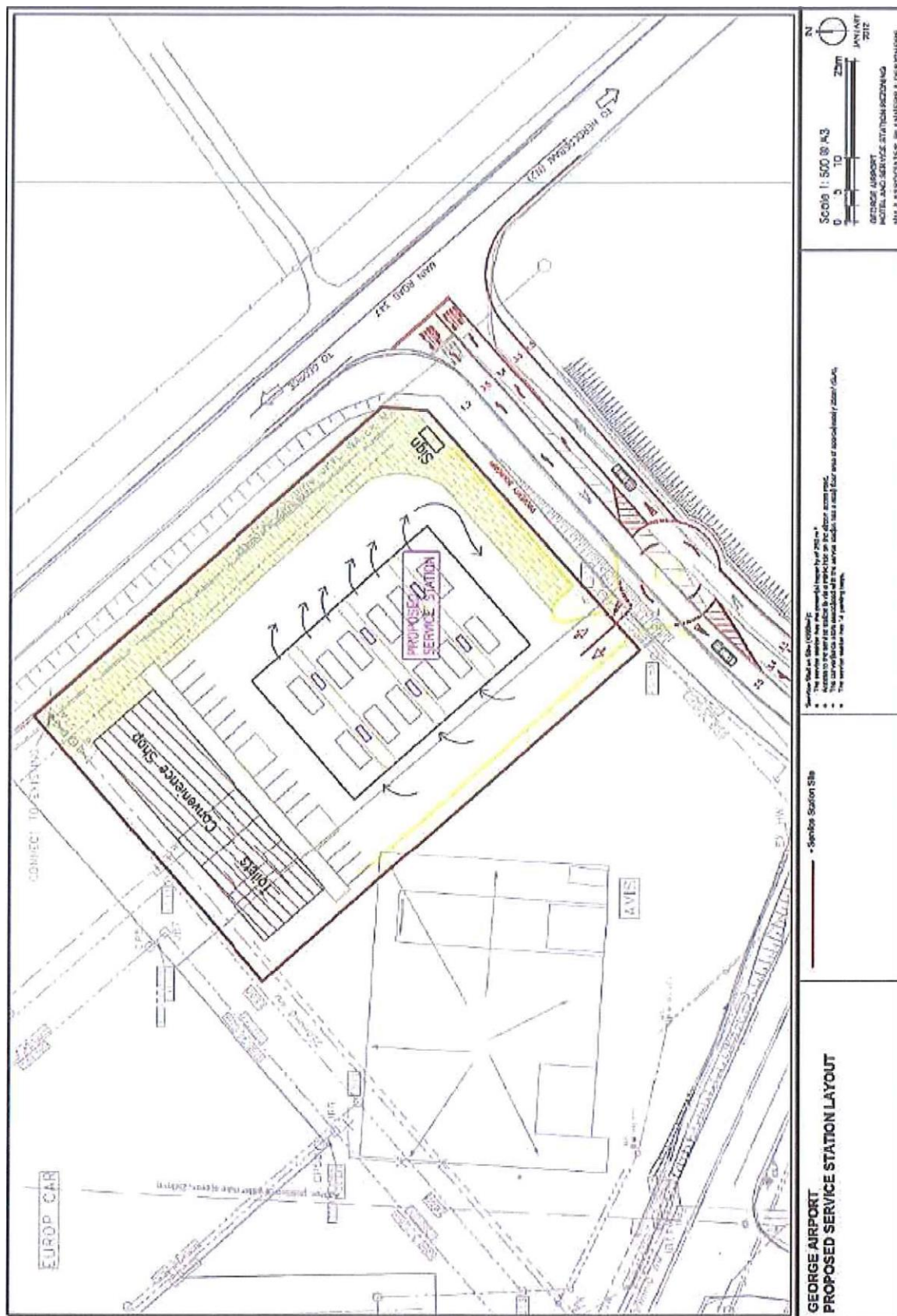


Figure E

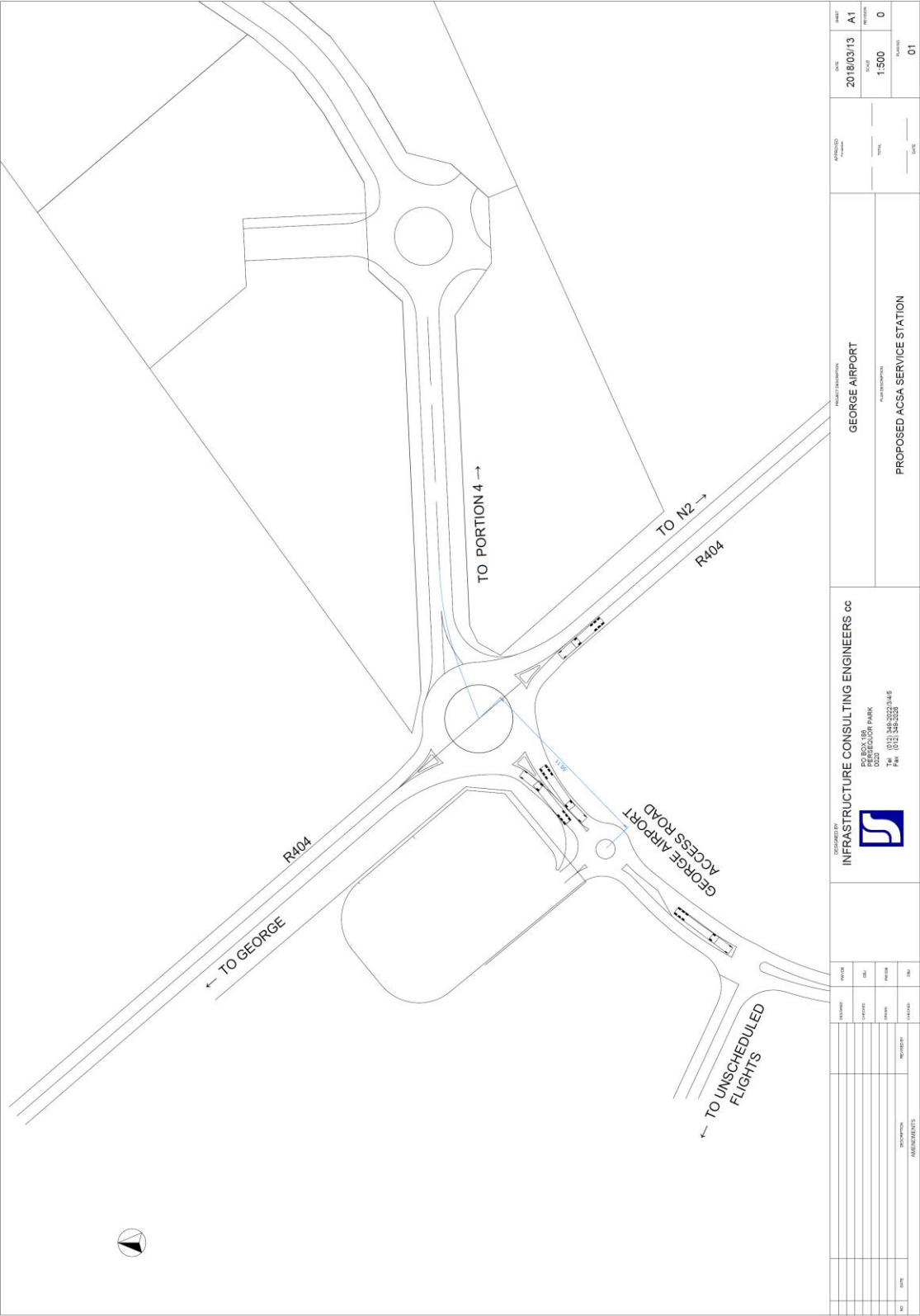


Figure F

COMPASS ROSE

PROJECT DETAILS:

- SHEET: A1
- DATE: 2017/03/23
- SCALE: 1:250
- REVISIONS: 0
- DRAWN BY: [Blank]
- CHECKED BY: [Blank]
- DATE: [Blank]

PROJECT DESCRIPTION: GEORGE AIRPORT

PROPOSED ACCESS TO SERVICE STATION ON PORTION 84 FROM ROAD TO UNSCHEDULED FLIGHTS

INFRASTRUCTURE CONSULTING ENGINEERS & ARCHITECTS INC.

PO BOX 186
BENTLEY, ALBERTA T7Y 1C6
Tel: (812) 349-2023/3445
Fax: (812) 349-2026

LEGEND:

SYMBOL	DESCRIPTION
[Symbol]	EXISTING PAVEMENT
[Symbol]	NEW PAVEMENT
[Symbol]	EXISTING DRIVEWAY
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[Symbol]	NEW UTILITIES

Annexure E

TMH 16 Requirements Check List

Stated requirements per TMH16 Volume 1 with paragraph numbers	Comments / information
A2.2 Traffic Impact Assessment cover 2.2.1 The Traffic Impact Assessment must be provided with a cover page that provides information identifying the traffic assessment. 2.2.2 The following information must be shown on the cover page: a) Municipality name b) Type of assessment c) Particulars of the town planning application, township name d) Erf numbers and farm names e) Date of report. f) Name and address of the Assessor and/or firm.	Done: George Municipality Traffic Impact Assessment Subdivision and rezoning Portion 4 Gwayang 208 March 2018 L Roodt Pr Eng
A2.3 Cover letter 2.3.1 A cover letter shall be bound into the assessment (first page following the cover) that includes the following certification: It is herewith certified that this Traffic Impact Assessment has been prepared according to requirements of the South African Traffic Impact and Site Traffic Assessment Manual. 2.3.2 The letter shall be signed by a person qualified to undertake traffic assessments. The following information must be provided for this person: a) Name, address and telephone numbers. b) ECSA Registration and registration number. c) Academic qualifications	See page following cover page Louis Roodt Pr Eng 820425 PhD Civil Engineering
A2.4 Development particulars 2.4.1 The following information must be provided for the development: a) Trade name of the development (where available). b) Erf numbers and farm names. c) Street address of development, including suburb. d) Reference to the land-use application (where available). 2.4.2 A location plan must be provided showing the location of the development. 2.4.3 Where applicable, references to any previously submitted and approved traffic assessments for the property must be provided. 2.4.4 The following information must be provided for the existing land-use rights (exercised and not exercised) as well as the land-use rights applied for: a) Total site area in m2. b) Floor Space Ratio (FSR), Floor Area Ratio (FAR) and Gross Leasable Area (GLA). c) Size of development per land use type and in the units specified in the Trip Data Manual. 2.4.5 Information must also be provided on the expected date and phasing of development. For each phase, the following information must be provided: a) Envisaged date of implementation. b) Size of development per land use type per phase of development.	Not Available Portion 4 Gwayang 208 NA See page 2 No previous assessment or studies for this property Page 4 to 7 Page 4 to 7 Page 4 to 7 Page 7 2018 see page 7 Page 7 and 8

2.4.6 The report shall refer to the master plan on which it relies and must include a statement on whether the total land-use rights applied for comply with the spatial development framework for the area.	George Spatial Development Framework 2013 Gwayang Local Spatial Development Framework (November 2015)
A2.5 Primary study area	Page 9 to 12
A2.6 Secondary study area	Page 13
A2.7 Background information	Page 13
a) Spatial development framework.	George and Gwayang SDF
b) Road network master plan.	George Roads Master Plan, 2006
c) Functional road hierarchy plan.	Ditto
d) Traffic management plan.	George Sector Plans and IDP
e) Public transport plan.	Not Applicable
f) Modelled traffic demand.	Sturgeon Consulting 2012 for ACSA
g) Other traffic impact and site traffic assessments in the area.	
A2.8 Site investigations	Page 15
A2.9 Traffic demand estimation	Page 19 and 20
A2.10 Demand-side mitigation	Page 19
.	
A2.11 Proposed improvements	Page 20
A2.12 Traffic Impact Assessment	Page 23
2.12.1 The Traffic Impact Assessments must be undertaken for the following scenarios:	
a) Design horizon year assessments, undertaken with the purpose of establishing the mitigating measures that are required to accommodate the development.	2022
i) "Without" proposed mitigating measures, undertaken to show the need for mitigating measures.	Existing situation
ii) "With" proposed mitigating measures, undertaken to show whether the proposed measures will be effective in addressing the impacts of the development.	Page 25
b) Planning horizon year assessments, undertaken with the purpose of establishing whether it will be physically possible to accommodate the proposed as well as future developments provided for in the spatial development frameworks of the Municipality.	2035
A2.13 Improvement costs (external services)	Page 33
A2.14 Engineering Service Contributions	Page 33
A2.15 Conclusions and recommendations	Page 34

Floor Factor means a factor (expressed as a numerical factor) which is prescribed for the calculation of the maximum floor space of a building or buildings permissible on a land unit, and if the floor factor is known, the maximum permissible floor space can be calculated by multiplying the floor factor by the area of the land unit;

Floor space in relation to any building means the area of the floor which is covered by a slab, roof or projections; provided that:

- (i) Any area, including a basement, which is reserved solely for the parking or loading of vehicles shall be excluded;
 - (ii) External entrance steps and landings, any stoep and any area required for external fire escapes shall be excluded;
 - (iii) A projection of eaves, and a projection which acts as a sunscreen or an architectural feature, which projection does not exceed 1,0 m beyond the exterior wall or similar support shall be excluded;
 - (iv) Any common pedestrian thoroughfare which is not covered by a roof, which provides access through a building concerned from parking, public street or open space, to some other parking, public street or open space, and which is accessible to the general public during normal business hours, shall be excluded;
 - (v) Any covered area outside and immediately adjoining a building at or below the ground floor level, where such paved area is part of a forecourt, yard, external courtyard, pedestrian walkway, parking area or vehicular access, and which is permanently open to the elements on at least the front or the side(s), shall be excluded;
 - (vi) Subject to clause (vii), any stairs, stairwells and atriums that are covered by a roof, shall be included;
 - (vii) In the case of multi-level buildings, any stairwells, lift wells, light wells or other wells, and any atrium, shall only be counted once;
- and provided further that floor space shall be measured from the outer face of the exterior walls or similar supports of such building, and where the building consists of more than one level, the total floor space shall be the sum of the floor space of all levels, including that of basements;

Gross leasable area means the area of a building designed for, or capable of, occupancy and control by owners or tenants, measured from the centre line of the joint partitions to the inside finished surface of the outside walls, and shall exclude the following:

- (i) All exclusions from the definition of floor space;
- (ii) Toilets;
- (iii) Lift shafts, service ducts, vertical penetrations of floors;
- (iv) Lift motor rooms and rooms for other mechanical equipment required for the proper functioning of the building; and
- (v) Interior parking and loading bays;

ROODT TRANSPORT SAFETY (PTY) LTD

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ROAD SAFETY ENGINEERING INVESTIGATIONS AND EXPERT WITNESS

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1 June 2021

To whom it may concern

Traffic Impact Statement for the Proposed Subdivision and Rezoning of Portion 4 of the farm Gwayang No 208 opposite George Airport Main Access on route R404

I herewith confirm that the updated Subdivision Plan (Plan No: Pr16/48F208Ptn4Sub09) dated 13 May 2021 does not impact on the previously undertaken Traffic Impact Assessment (dated March 2018) for the subdivision and rezoning of Portion 4 of Farm Gwayang No 208.

This assessment is based on the following:

1. Access from the R404 at the proposed traffic circle remains similar to the previous layout;
2. There are no changes in the land uses applied for in rezoning application;
3. There is no significant change in the expected trip generation.

The updated subdivision plan has approximately 2% less Industrial Zone 1 area, which is the main contributor to trips from the proposed township. The 138 peak hour trips thus reduce by 3 trips, which is not significant. The Business Zone IV erf for the filling station increases in area, mainly due to the Open Space designated in the previous subdivision plan now integrated with the filling station. The trips generated from the filling station stays the same despite the larger erf size. The Transport Zone II area reduces due to the simplified road layout. The Agricultural Zone I area is now split between the future road reserve and a utility area being the land to the east of the road reserve.

Zoning	Area 2017 [sqm]	Area 2021[sqm]	Remarks
Industrial Zone I	54023	52838	Reduced by 2%
Business Zone VI	7039	13283	Filling station erf
Open Space	2881		Incorporated into filling station erf
Transport Zone II	9606	7425	Internal road reserve area reduced
Agricultural Zone 1	36884 (a)	20322 (b)	Road reserve for TR89
Utility	(c) = (a) - (b)	16565 (c)	Land on east side of road reserve

Regards



L de V Roodt PrEng PhD

**CIVIL ENGINEERING SERVICES
REPORT FOR THE REZONING /
SUBDIVISION APPLICATION
I.T.O. THE GEORGE BY-LAW ON
MUNICIPAL LAND USE PLANNING**

- Revision 6 -

**Farm Gwayang 208 Portion 4
George**

July 2018

Prepared for:

8 Mile Investments (Pty) Ltd
PO Box 1163
Rynfield
Benoni

Prepared by:

F van Zyl (Pr Eng Civil)
ECSA 96



Content

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3. Civil engineering services

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5. Limitations

6. Annexure

- **Annexure I: Locality plan / Aerial photograph (Studio19, April 2017)**
- **Annexure II: Site photographs (Studio19, April 2017)**
- **Annexure III: Site development / Subdivision Plan (Vreken, 24 March 2017)**
- **Annexure IV: Civil engineering schematic services layout (Studio19, June 2018)**
- **Annexure V: Sewer pump station / Protection of pipe lines at water course crossings - Schematic layout (Studio19, June 2018)**
- **Annexure VI: Preliminary operational / maintenance plan for sewer system (Studio19, June 2018)**

1. Scope of works

The owner of Portion 4 of the farm Gwayang 208 has appointed Fritz van Zyl (Pr. Eng [Civil] - ECSA 960570) to investigate and evaluated the provision for essential civil engineering services for the proposed filling station / retail facility / industrial zone development on the above property in the George municipal district. The primary objective of the investigation was to ensure that the proposed development will be sustainable in terms of service provision and to evaluate the impact on the existing municipal services network.

The following documents are attached for consideration / information:

- Locality plan (Studio19, November 2017)
- Aerial photograph (Studio19, April 2017)
- Site development / Subdivision Plan (Vreken, November 2017)
- Engineering services plan – Revision 5 (Studio19, July 2018)
- Schematic layout of proposed Sewer pump station / Protection of pipe lines at water course crossings - (Studio19, June 2018)
- Preliminary operational / maintenance plan for sewer system (Studio19, June 2018)
- Site photographs (Studio19, April 2017)

This memorandum outlines the required information of the selected engineering services for the proposed development and supports the necessity and desirability of the application in order to obtain the approval from the relevant authorities in terms of Spatial Planning Land Use Management Act (SPLUMA 16/2013) and the Land Use Planning Act (LUPA 3/2014).

2. Site description

The attached Locality / Site development plans (Annexure I & III) illustrate the existing site and the proposed preferred development of the proposed filling station / retail facility / Industrial Zone on Portion 4 of the farm Gwayang 208

A recent aerial photograph (March 2017) and on-site photographs are also attached.

3. Engineering services

The provision for essential engineering services for the proposed development has been investigated and evaluated according to the provisions of the current national and municipal standards and regulations (i.e. 'Guidelines for the provision of Engineering Services for residential townships, 1983' & 'The Human Settlement Planning and Design Handbook, 2000'). The investigation centred around the utilization / upgrading of the existing services along the R404 adjacent to the development site i.e. municipal water supply, municipal sewer line / pump station and solid waste disposal for the proposed preferred alternative. The proposed road access, storm water control and the electrical services are dealt with in separate reports (see Roodt - March 2018, Infrastructure Consulting Engineers - June 2018, Clinkscapes Maughan Brown - March 2017)

It is proposed that all connections to the existing municipal services (as indicated on the Proposed Services Schematic Layout Plan attached as Annexure IV) be provided according to the relevant engineering standards and to the satisfaction of the Municipality of George. The existing services and the applicable upgrades are briefly discussed below:

3.1. Water supply

Potable water will be supplied (via a new 160mm uPVC pipe) from the existing reticulation system feeding from the existing municipal water supply line along the R404 near the entrance to the George airport. Way leave approval from the relevant Provincial departments will be required in order to traverse (i.e. horizontal directional drilling) under the existing R404 provincial road.

The following estimations of the basic potable water requirements (i.e. average demand) for Phase 1 i.e. business zone (kitchen / toilets / wash up / car wash) and Phase 2 i.e. industrial zone (warehouse toilets & wash up areas) were calculated:

- Phase 1: Business Erf x1 (i.e. Filling station / Retail facility): AADD = **20 kl/day @ 1.5 l/s peak flow and storage requirement [2x Average daily demand + Fire Storage (High Risk – 6 hours @ 1500l/min)] = 760m³**
- Phase 2: Industrial Plots x7 (i.e. Warehousing / Airport services): AADD = **160 kl/day @ 1.5 l/s peak flow and storage requirement [2x Average daily demand + Fire Storage (Moderate Risk – 4 hours @ 1500l/min)] = 600m³**

All water supply pipes will be installed within the proposed access road reserve and all shallow pipe depths at water course crossings (i.e.<1m) will necessitate additional hard layer protection in the road design in order to protect pipes against storm water and heavy vehicle damage. The required construction method statements, rehabilitation and maintenance plan will be finalised after the design of the water supply network has been completed and approved by the Municipality of George. The rehabilitation plan for the road construction will include the installation of the water supply network.

Initial discussions with George Municipality indicated that the existing network should have the capacity to accommodate the proposed development of the proposed filling station / retail facility and no upgrade of the existing main water supply line will be required.

In order to minimize the impact on the municipal supply it is proposed that mandatory rainwater storage be implemented and furthermore to ensure sufficient capacity in the storage tanks (i.e. 10kl / site minimum) to accommodate all the on-site flushing toilet and garden irrigation requirements. Water saving measures including aerated taps and dual flush toilets will also be implemented.

Fire flow requirements will be supplied as per NBR / SANS minimum requirements and will include fire extinguishers and hose reels @ 300kPa water pressure and a minimum flow rate of 1500 l/min. It is recommended that a flow test be conducted over a 24 hour period in order to determine if the existing municipal supply line can accommodate this additional water requirement.

The alignment of the existing water supply line and the proposed new connection is indicated on the attached Engineering Services Plan (Studio19, June 2018). Potential future developments to the north and south of Portion 4 of the farm Gwayang 208 will be able to feed from the proposed water supply network

assuming that similar type developments / quantities are envisaged. Further discussion with adjacent landowners will be required to formalise an agreement regarding future water supply connections and cost.

3.2. Sewage

Preliminary calculations indicate that the proposed preferred development for Phase 1 i.e. business zone (kitchen / toilets / wash up areas) and Phase 2: i.e. Industrial zone (warehouse toilets & wash up areas) will generate the following average daily wastewater quantities:

- Phase 1: Business Erf x1 (i.e. Filling station / Retail facility): **15 kl/day @ 0.15 l/s peak flow**
- Phase 2: Industrial Plots x7 (i.e. Warehousing / Airport services): **120 kl/day @ 1.2 l/s peak flow**

The wastewater generated for phase 1 will be conveyed via a gravity sewer collector system (110mm uPVC @ min 1:60 gradient) into a 160mm uPVC gravity line (@min 1:60 gradient) which in turn will traverse the R404 Provincial Road towards the existing municipal sewer pump station located near the entrance of the George airport. Initial discussions with George Municipality indicated that the existing municipal network should have the capacity to accommodate the proposed development and no upgrade of the existing pump station or sewer line will be required.

Phase 2 of the proposed development (i.e. Industrial zone) will include a 63/110mm uPVC pump line that will spoil into the gravity sewer collector system. The pump station will include a back-up pump / power supply and telemetric system that will automatically activate and sound an alarm in case of a pump and/or power failure. The operational plan for the pump station will incorporate a 24hr response team that will monitor and attend to all maintenance issues. All emergency or accidental spills from the pump station will be discharged into an underground conservancy tank with a 48 hour storage capacity. The schematic layout of proposed sewer pump station is attached as Annexure V.

All sewer pipes will be installed within the proposed access road reserve and all shallow pipe depths (i.e.<1m) at water course crossings will necessitate additional hard layer protection in the road design to protect pipes against storm water and heavy vehicle damage (see attached concept drawings attached under Annexure V). Way leave approval from the relevant Provincial departments will be required in order to install (i.e. horizontal directional drilling) the proposed sewer under the existing R404 provincial road. The total length of the new proposed sewer network will be approximately 700m. The required construction method statements, rehabilitation, operational and maintenance plans will be finalised after the design of the sewer system has been completed and approved by the Municipality of George. The rehabilitation plan for the road construction will include the installation of the sewer system. A preliminary operational / maintenance plan for the proposed sewer system is included as Annexure VI.

All surface water / rain water from the forecourt / car wash areas of the proposed filling station will be intercepted via pavement kerbing into storm water traps that will discharge into a pollutant treatment and natural filter system. The proposed pavement design, storm water control requirements, spill management and the proposed natural filter system for the filling station area are discussed in a separate report from Infrastructure Consulting Engineers (ICE, June 2018).

As with the water supply network it is also envisaged that potential future developments to the north and south will be able to feed into the proposed sewer system (assuming similar type developments / quantities). Further discussion with adjacent landowners will be required to formalise an agreement regarding future sewer connections and maintenance.

The position of the new sewer line / pump line and possible future connection points are indicated on the attached Engineering services plan (Annexure IV).

3.3. Access & parking / Storm water control

The proposed development has an entrance point from the adjacent Provincial / Activity road (R404) and the Traffic Impact Statement, the proposed road / parking requirements and associated storm water control measures are described in separate reports (Roodt, March 2018 / ICE, June 2018).

The locations of the existing roads and the proposed road upgrade and parking areas are illustrated on the attached Site Development plan (Annexure III).

3.4. Electrical supply

The Electrical Services for the proposed preferred alternative is dealt with in a separate report (see Clinkscapes Maughan-Brown, REF 11689, March 2017)

3.5. Solid waste management

The National Environmental Management legislation i.e. Waste Act (Act No. 59 of 2008) covers all aspects relating to waste management and will be adhered to in conjunction with the regulations / guidelines of the new Eden Municipality Integrated Waste Master Plan that will manage the delivery of all solid waste (via the George transfer station) to the proposed new district landfill site near Mossel Bay.

The removal of all solid general waste by Municipal contractors will take place from the mandatory enclosed waste service yards at each of the service station / light industrial erven and will be accessible from the access road. Solid waste quantities for commercial / light industrial purposes are based on an estimated solid general waste generation of 0.1kg/m²/day and it is expected that Phase 1 (i.e. service station) will generate approximately 100 kg/day and Phase 2 (i.e. light industries) in the order of 3500 kg/day. The removal of domestic / general waste and management thereof will be handled by the George Municipality as per the Services Agreement between with the developer / owner of property.

Waste reduction, re-use & recycling in terms of Eden Municipality Integrated Waste Master Plan will be strongly encourage and mandatory separate recycle bins for the various type of recyclable materials will be provided in waste collection yards on all the commercial / industrial properties. These bins will be emptied by approved recycling service providers.

All hazardous and industrial waste will be disposed of by registered service providers in terms of the regulations of the Waste Act (Act No. 59 of 2008) and the Hazardous Substances Act (Act 5 of 1973). No burning, on-site burying or dumping of any type of waste will be allowed.

All solid waste generated during the construction process will be separated and placed in appropriate containers in the bulk waste collection area in the Contractors camp and will be cleared weekly by a recognised service provider. Litter collection bins will be provided within the Contractors camp and at temporary locations on the construction site and will be regularly cleared. All unutilised construction materials will be removed once construction has ended. All removed topsoil should be stockpiled on-site and as far as possible be reused for rehabilitation and landscaping purposes in and around the development.

4. Conclusion

It is the intend of this memorandum to provide essential background information regarding selected civil engineering services for the proposed filling station / retail facility and industrial zone development on Portion 4 of the farm Gwayang 208 and present the proposed activity as a well needed and sustainable in terms of the provision of the required civil engineering services.

In conclusion the proponents want to emphasize their willingness to include in their project planning and design all necessary consultation and alternatives to ensure all raised concerns are addressed and mitigated.

5. Limitations

This report has been prepared for the sole benefit of the current owners of the property as described above. It is not to be relied upon or used out of context by any other person without reference to the undersigned. The recommendations and opinions given in this report are based on limited site data and variations in the conditions could exist across the site.

Signed on behalf of the proponent:



Fritz van Zyl

Pr.Eng (ECSA 960570)



Annexure I:

Locality plan / Aerial photograph

Annexure II:

Site photographs

Annexure III:

Site development / Subdivision Plan

Annexure IV:

Engineering services schematic layout plan

Annexure V:

**Sewer pump station / Pipe line detail - Schematic
layout (Studio19, June 2018)**

Annexure VI:

**Preliminary operational / maintenance plan for
sewer system (Studio19, June 2018)**

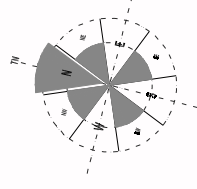
Notes:



Farm 208/portion 4
boundary



Proposed development
area



Project: **Gwayang 208 /
Portion 4
George**

Drawing: **Locality Plan**

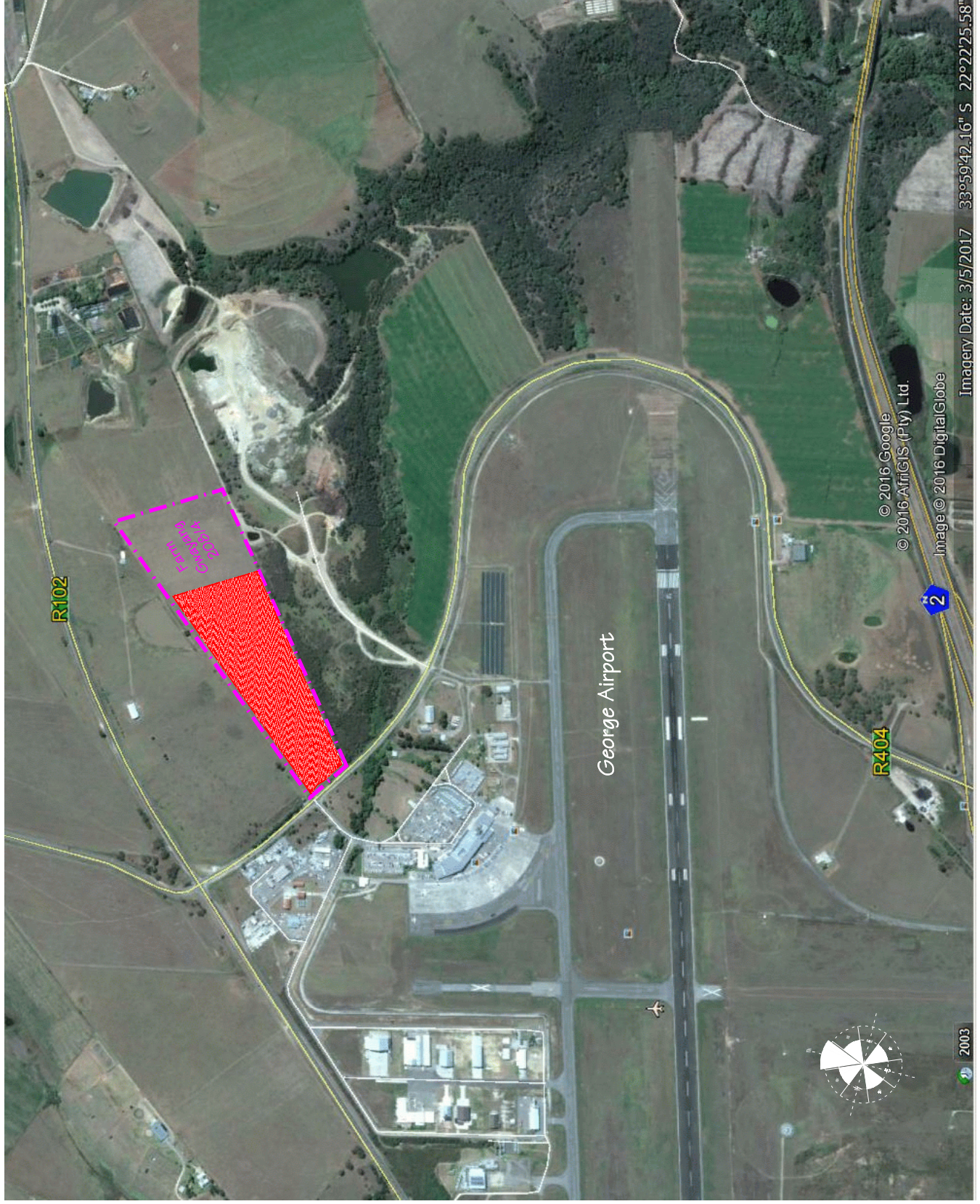
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Volume 005
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Author: S.19
Check: S.19
Date: 17/08/2017

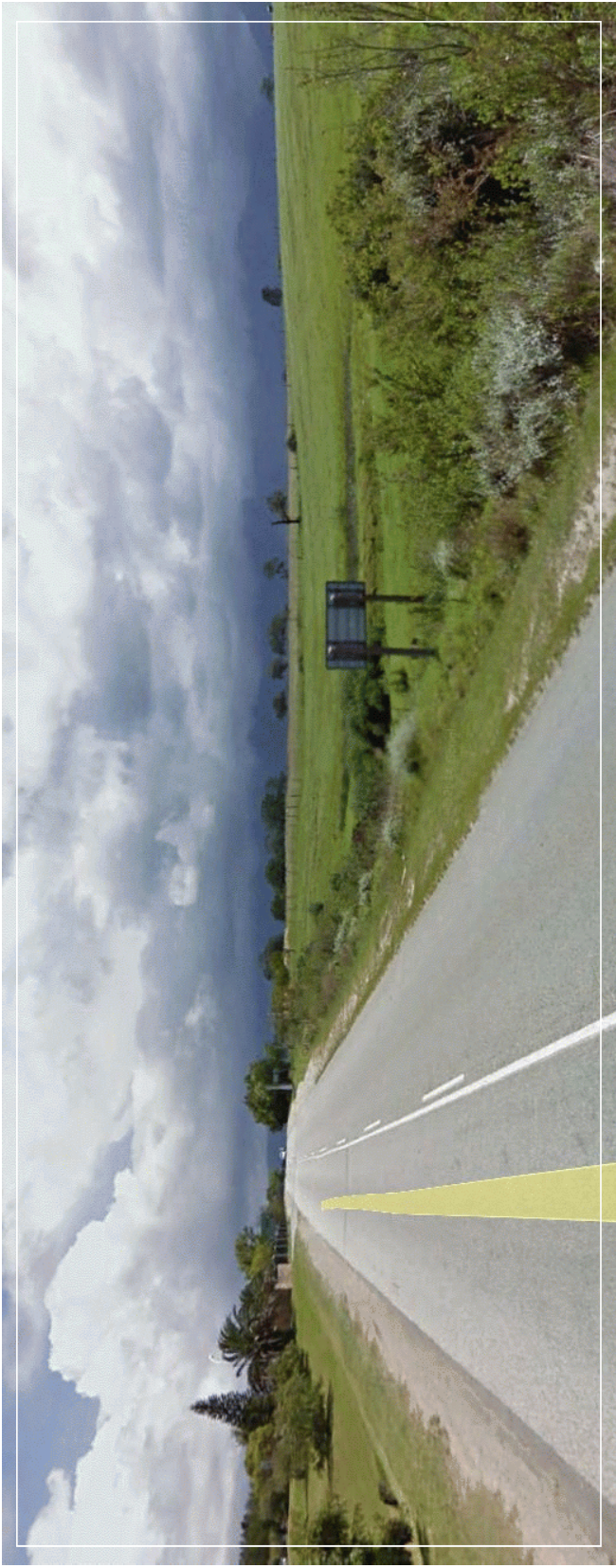
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Date: Oct '17

Dwg no: GRG208/IE1



Notes:



Project: Gwayang 208 /
Portion 4
George

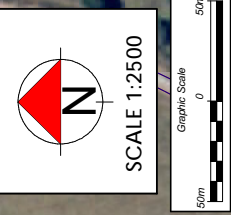
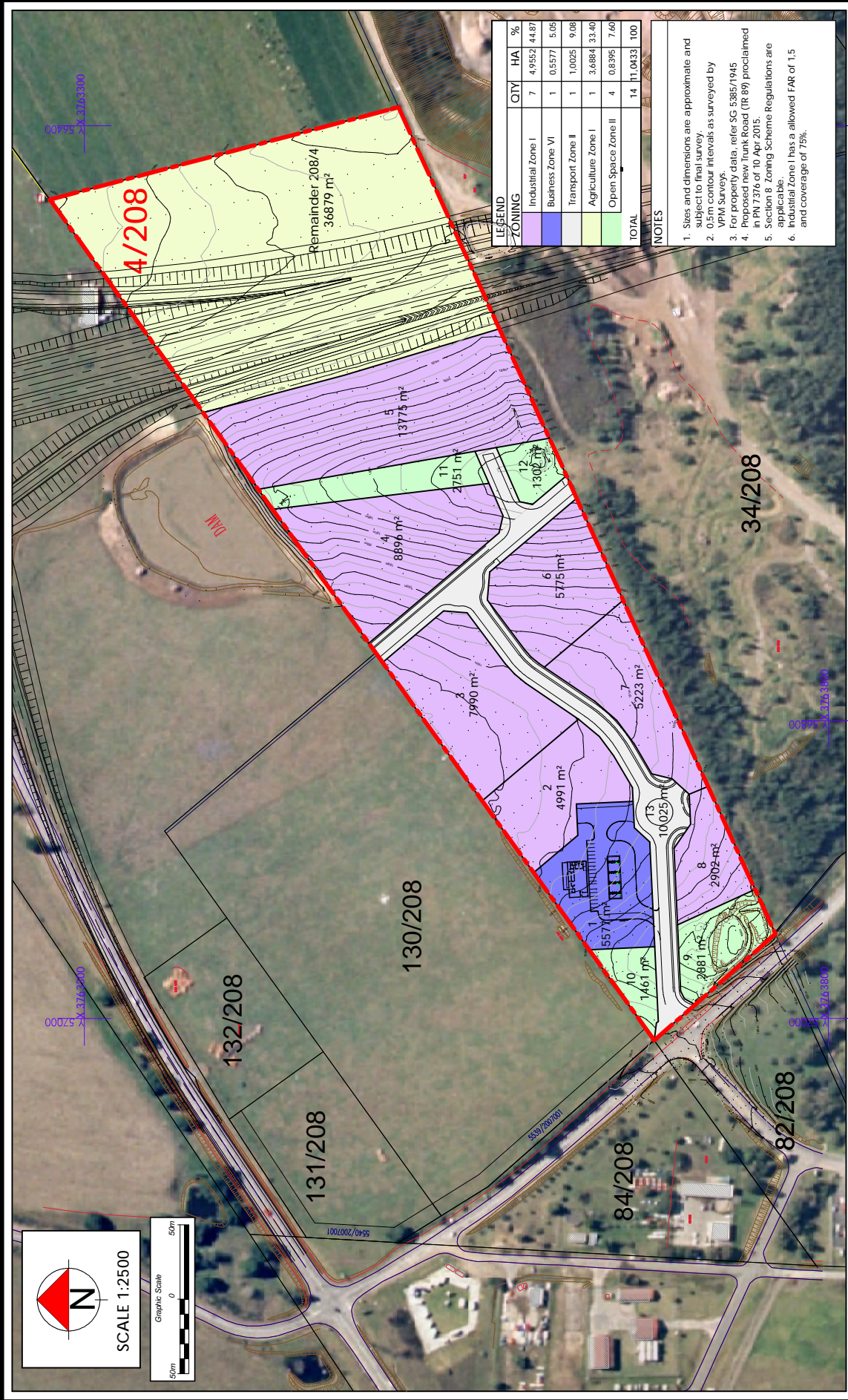
Drawing:
Site photographs

S19
P.O. Box 882
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Email: info@stadium
George 653
Tel: 0440000000
Fax: 0440000000
Email: info@stadium

Scale:
(as shown)


Date:
Apr '17

Dwg no:
GRG208/E2



LEGEND			
ZONING			
Industrial Zone I	QTY	HA	%
Business Zone VI	7	4,952	44.87
Transport Zone II	1	0,577	5.05
Agriculture Zone I	1	1,002	9.08
Open Space Zone II	1	3,684	33.40
TOTAL	14	11,043	100

- NOTES
1. Sizes and dimensions are approximate and subject to final survey.
 2. 0.5m contour intervals as surveyed by VPM surveys.
 3. For property data, refer SG 5385/1945 in PN 7376 of 10 Apr 2015.
 4. Proposed new Trunk Road (TR 89) proclaimed in PN 7376 of 10 Apr 2015.
 5. Section 8 Zoning Scheme Regulations are applicable.
 6. Industrial Zone I has a allowed FAR of 1.5 and coverage of 75%.



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APPROVED IN TERMS OF SECTION 23(1) OF THE
GEORGE MUNICIPALITY'S BY-LAW ON
MUNICIPAL PLANNING AS PUBLISHED IN
P.N. 7481/2015 ON 1 SEPTEMBER 2015

MUNICIPAL MANAGER

DATE: _____

DRAWN: MV CHECKED: NV

PLAN NO: P16/4/2016/208PH/SUB05

PLAN DATE: 27 Nov 2017

STORED: 2 Drawings App 01/11/16/208PH/SUB05.dwg

COPY RIGHT:
This Plan may not be copied or amended without the
written consent of RM Vreken

PLAN 4

Subdivision Plan

Portion 4 of the Farm Gwayang No 208, Division George

PLAN 4

SUBDIVISION PLAN

Notes:



Farm 202/79 boundary
(11.043ha) & Proposed
development area
(7.3549ha)



Proposed entrance &
traffic circles



Existing municipal water
supply line



Proposed 160mm uPVC
water supply pipe and
connection points / fire
hydrants



Existing municipal sewer
pump station



Proposed 110/160mm
uPVC gravity sewer line
and manholes connection
points



Proposed 110mm uPVC
sewer pump line and pump
connection points (incl.
Back-up pump / emergency
power supply / 48hr
emergency storage)



Future water supply /
sewer connections to
potential adjoining
developments

Project:

Gwayang 208 /
Portion 4
George

Drawing:

Civil Engineering
Services Plan

S19

Project no: 2019/001
Drawing no: 2019/001
Revision no: 01
Revision description: 1st revision
Revision date: 10/06/2019
Revision by: [Signature]
Revision checked by: [Signature]
Revision approved by: [Signature]

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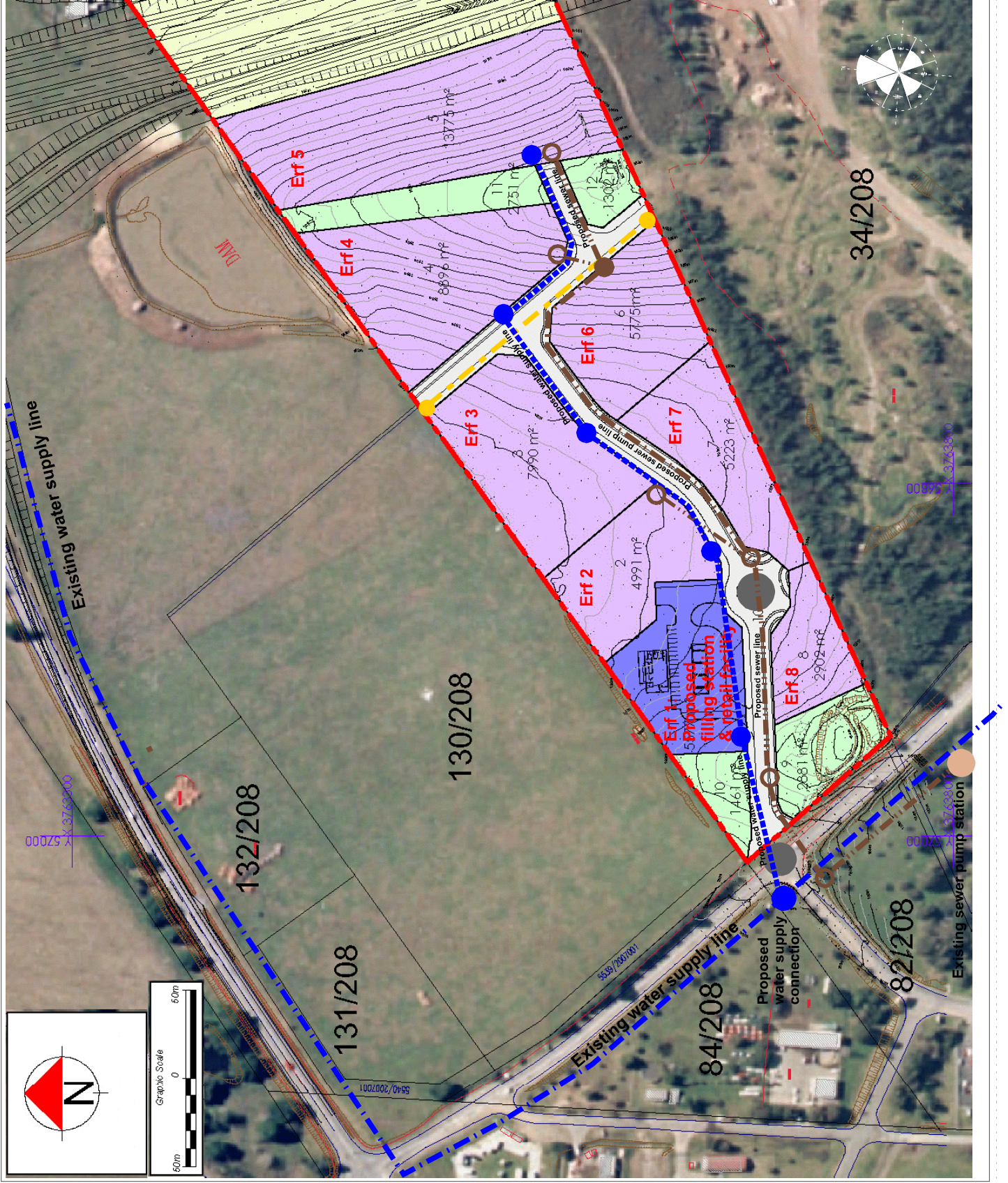
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Date:

June '18

Dwg no:

GRG208/E3 (rev05)



Notes:

Project: Gwayang 208 /
Portion 4
George

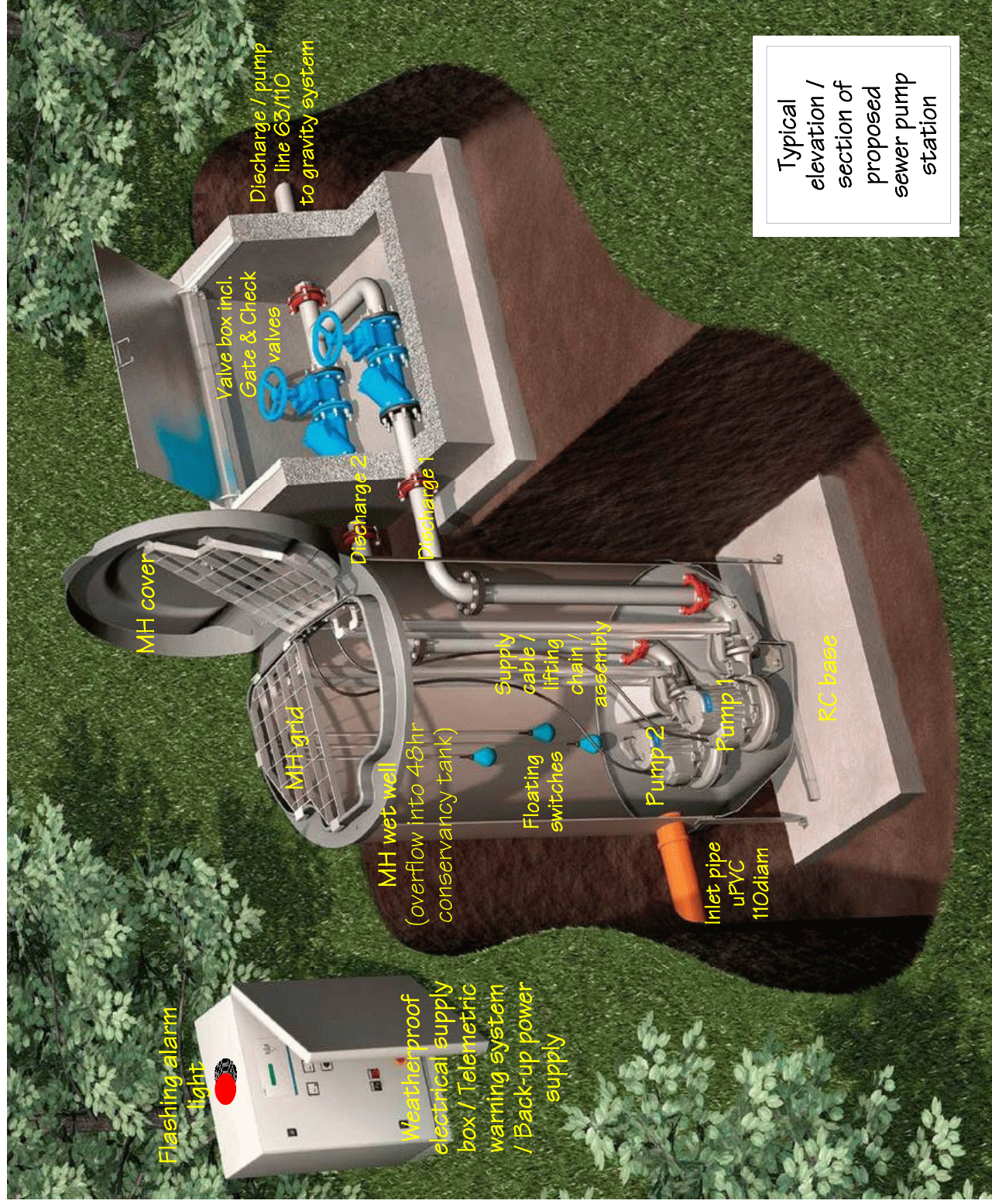
Drawing: Pump station
Schematic Plan

519

Scale: (Not to scale)

Date: Apr '18

Dwg no: GRG208/E3 (rev05)



**Preliminary Operating /
Maintenance plan for the
proposed sewer system filling
station / retail facility /
industrial zone development on
the Farm Gwayang 208 Portion
4, George**

- Revision 1 -

June 2018

Prepared for:

8 Mile Investments (Pty) Ltd
PO Box 1163
Rynfield
Benoni

Prepared by:

F van Zyl (Pr Eng Civil)
ECSA 96



Content

page

1. Maintenance & Servicing

2. Risk Assessment

2.1 Pump Station

2.2 Pipe network

3. Infrastructure failure

2.1 Pump Station

2.2 Pipe network

4. Limitations

5. Annexures

1. Maintenance & Servicing

Maintenance and Servicing of the pump station, equipment and ancillaries as well as the pipeline and its components for the proposed filling station / retail facility / industrial zone development will be undertaken by the Municipality of George, in accordance to the requirements of the approved Operating and Maintenance manual.

The detailed Operating and Maintenance manual will be compiled for the Municipality of George by the appointed consulting engineers and would detail the specifications, functioning, required operation and the maintenance and servicing requirements for all equipment and for the system as a whole. The manual will also specify procedures to be followed in event of plant and equipment failures.

The Operating and Maintenance manual will be based on the requirements of the equipment suppliers and good general practice to ensure maximum reliability and availability of equipment.

2. Risk Assessment

Risk Assessment Failure of the pump station equipment and pipeline could lead to sewage overflow at the pump station and spillages along the route of the pipeline respectively.

2.1. Pump station

In order to mitigate against pump station failures, the following measures will be incorporated into the design of the pump station:

- The pump station is fitted with two pumps (1 duty, 1 standby). Thus there will be a pump available to perform the full pumping load should one pump be out of service. Furthermore a thorough maintenance and operating specification will require routine and corrective maintenance on the pump station equipment that will ensure both pumps are always available for operation.

- A 24hr response team will have available a portable pump to be used in event of both installed pumps not being available.
- Pumps will be automatically controlled via the telemetric system that would be fitted with a remote monitoring function. In the event of abnormal conditions the alarm system will notify the operators / 24hr response team at the Municipality of George.
- Pumps controls enable manual override of automation electronics, to allow start-up of pumps independently electronics.
- Both pumps and the control systems will be connected to a back-up power supply (i.e. generator or battery system) to allow operation of the system in the event of the power failures, and routine and corrective maintenance of the generator will ensure the generator is available at all times.

2.2. Pipe network

In order to mitigate against pipeline failures, the following measures will be incorporated into the design of the pipeline:

- The sewer system will be designed to ensure ideal velocity to prevent settlement of solids while reducing unnecessary high pressures associated with flow frictional losses.
- All components and material will be selected to ensure that repairs can be performed speedily and components to be readily available.
- Air release and scour valves have been ideally placed to facilitate emptying of the pipeline whilst containing spills during maintenance.

3. Infrastructure failure

The normal and routine maintenance of the pump station equipment and pipeline should prevent the occurrences of spillages, blockages and leaks. The following response plan will however apply in case of an emergency:

3.1. Pump station

- The pump station will be equipped with a Telemetric system (i.e. SCADA) to monitor pumps stations continuously. Set points for low and high water thresholds are set to alert the Municipality / 24hr Response team of pump station failure.
- Municipal / Response team staff will check the status of the alarm and will determine if the problem can be corrected remotely via the remote interface.
- If a site visit is required, upon arrival at site a determination must be made as to the cause and extent of the problem.
- The necessary actions must then be taken to return the pumps to service.

3.2. Pipe network

In the event of pipe leakage the pumps must be isolated in order to undertake the repairs. Isolating the pumps will result in filling of the pump station sump and the 48 hr conservancy tank (the rate of filling which will be dependent on the time of day of isolation). The duration of pipeline repairs and the timing thereof must ensure that isolation of the pumps for the required does not result in overflows at the pump station.

The following process must be employed in planning and execution of pipeline repairs:

- Assess cause and rate of leakage, and repairs required. Repair to pipe work must be undertaken in accordance with the recommendations of the pipe supplier.

- In the event where permanent repairs cannot be undertaken during times of low sewage flow (into the pump station) or the time required for the repair poses a risk of overflow at the pump station sump, a temporary bypass connection shall be made over the area of damage of the pipe work and permanent repair should there be undertaken as soon as possible.

4. Limitations

This preliminary operational and maintenance plan has been prepared for the sole benefit of the current owners of the property as described above. It is not to be relied upon or used out of context by any other person without reference to the undersigned. The recommendations and proposals given in this plan are based on limited data and will be finalised after the design of the sewer system has been completed and approved by the Municipality of George.

8 MILE INVESTMENTS 236 (PTY) LTD

ELECTRICAL SERVICES REPORT

FOR

PROPOSED FILLING STATION AND AIRPORT SUPPORT DEVELOPMENT

ON

**PORTION 4 OF THE FARM GWAYANG NO 208,
DIVISION GEORGE**

REPORT NO G/11689/R1

December 2017



CLINKSCALES MAUGHAN-BROWN
**CONSULTING MECHANICAL
& ELECTRICAL ENGINEERS**

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Annexures

- A** Drawing No's:
- 11689/E/SK01 – Locality Plan
- 11689/E/SK02 – Phase 1: Filling Station: Plan Layout Showing Proposed Electrical Connection to George Municipality's Network
- 11689/E/SK03 – Master Plan: Plan Layout Showing Proposed MV & LV Reticulation Networks for Entire Development, i.e. Phase 1 and Phase 2
- B** Photographs No's 1 to 3
- C** Letter from George Municipality dated 17 March 2017, providing confirmation that their nearby MV network has sufficient spare capacity to supply Phase 1 of this development.
- D** Letter from CMB to George Municipality dated 9 November 2017 confirming their advice that the nearby MV network also has sufficient spare capacity to supply both Phase 1 and 2.

ELECTRICAL SERVICES REPORT FOR PROPOSED FILLING STATION AND AIRPORT SUPPORT DEVELOPMENT ON PORTION 4 OF THE FARM GWAYANG NO 208, DIVISION GEORGE REPORT NO G/11689/R1

1.0 INTRODUCTION

This report has been compiled by Clinkscales Maughan-Brown (CMB) at their George Office, who are the Electrical Consultants for this project and responsible for making the necessary bulk electrical supply arrangements with the Supply Authority and compiling this electrical services report.

This report supersedes CMB's Report No G/11689/R, which only covered the filling station, incorporating a convenience shop. This will now be considered to be Phase 1 of the Development.

The Development for which application is now made is for said filling station, but with the addition of seven (7) industrial zoned erven. The filling station being Erf 1 and the industrial zoned erven designated Erven 2 to 8. The industrial zoned erven are to be developed for warehousing and other airport support services. The erf on the Eastern side of Erf 5 is allocated for a new Trunck Road (TR 89) and Erven 9 to 12 are allocated as open spaces, all as indicated on Drawing No. 11689/E/SK03, included under Annexure A hereof.

The area will be developed in two (2) phases, namely Phase 1 for the filling station and Phase 2 for the industrial zoned erven.

The report is for inclusion in the Environmental Impact Assessment (EIA) report and to obtain rezoning approval, and to be incorporated in the electrical section of the Services Agreement with the Supply Authority.

This work is done on behalf of the Developer, Messrs 8 Mile Investments 236 (Pty) Ltd. There is a possibility that at a later stage it might be a different company handling this Development.

The other consultants on this project are:

- (i) Environmental impact assessment – Cape EAPRAC
- (ii) Town planners – Marike Vreken Urban & Environmental Planners
- (iii) Civil engineering – Infrastructure Consulting Engineers
- (iv) Water and sanitation – Studio 19

2.0 MASTER PLAN AND PHASES

For long term planning purposes an electrical master plan has been compiled that includes all phases, i.e. Phase 1 and 2 of the Development.

For economic reasons it has been considered necessary that the main supply to the Development also be undertaken in two (2) phases, i.e. a supply of lower capacity and simplified construction for Phase 1, which is temporary, and of higher capacity and that is permanent to serve Phase 1 and 2 in terms of the master plan.

3.0 DRAWINGS

Drawing No's 11689/E/SK01, SK02 and SK03 are annexed to this report, and contain the following information:

- (i) Location of the entire Development (Phase 1 & 2), and the site plan for the filling station and convenience shop. Please note that the latter plan is still provisional and is for indicative purposes only.
- (ii) Plan layout of the Supply Authority's existing MV (Medium Voltage – 11 000 volt – 11kV) network in the vicinity of the Development.
- (iii) The proposed Point of Connection to the Supply Authority's network to firstly supply Phase 1, and secondly Phase 1 and 2 combined, to be taken from different connection points at the network.
- (iv) The proposed Point of Supply for firstly Phase 1 of the Development, and secondly the Points of Supply for Phase 1 and 2 combined. Part of this is the extension required to the Supply Authority's MV and LV network in order to make the necessary LV (Low Voltage – 400/230 volt) Bulk Supply and Meter Points available to the respective erven.

4.0 PHOTOGRAPHS

Also annexed to this report are the following photographs related to Phase 1:

- (i) No 1 – View of municipal 11kV overhead line strain pole and 16kVA pole mounted transformer substation. This is the proposed location for a new 200kVA pole mounted transformer substation to supply Phase 1 of the Development at LV – refer Drawing No 11689/E/SK02. Note that the 11kV drop-out fuses for the 16kVA transformer are in the “open” position.
- (ii) No 2 – View of 11kV overhead line towards supply point, i.e. in the direction of George.
- (iii) No 3 – View of municipal Pole No's US 89 and 90 and 11kV overhead line towards 16kVA pole mounted transformer substation.

5.0 LOCATION AND EXTENT OF DEVELOPMENT

The location of the Development is depicted on Drawing No. 11689/E/SK01 and the extent thereof on Drawing No. 11689/E/SK03. The proposed development is situated immediately opposite the George airport.

As stated above, the Development consists of the filling station erf and seven (7) industrial erven ranging from 2 902m² to 13 775m².

6.0 SUPPLY AUTHORITY

The Supply Authority will be George Municipality in which the boundaries of the Development fall.

7.0 BASIS OF REPORT

The report is based on the following:

- (i) Site survey.
- (ii) Meetings and correspondence with Messrs. Steyn van der Merwe (Senior Manager: Electrotechnical Services) and Deon Esterhuysen (assistant to Mr. van der Merwe) of the George Municipality's electrical department. A drawing was obtained from said department of their existing MV network in the immediate vicinity of the Development.

- (iii) A revised plan (27 Nov 2017) of the proposed Development received from the Town Planners, Marike Verken Urban and Environmental Planners.
- (iv) CMB's database of the electrical loadings of similar developments.

8.0 **ENERGY SAVINGS MEASURES**

The following objectives will be set to reduce electricity consumption:

- (i) Comply with SANS 10400.
- (ii) Energy efficient light fittings, air conditioning, mechanical ventilation, refrigeration and water heating installations, electric motors, etc.
- (iii) Use of LPG gas instead of electrical appliances for cooking where economically feasible.
- (iv) Use of energy efficient appliances.
- (v) Building and plant load management systems to reduce power consumption in the case of the industrial erven.
- (vi) Installation of Photo Voltaic (PV) and other Small Scale Embedded Generators (SSEG) where it can be economically justified.

It is expected that with the implementation of these measures, consumption will reduce by approximately 20%.

9.0 **ELECTRICAL PEAK kVA DEMAND**

The estimated Peak kVA Demand that will be imposed on the municipal network has been calculated as follows:

9.1 **Phase 1**

Item	Description	kVA
(i)	Filling station and convenience shop - $\pm 350\text{m}^2$ @ 200VA/m ²	70
(ii)	Petrol pumps	20
(iii)	Area lighting	8
(iv)	Sundry loads	5
TOTAL		103

Applying an overall network diversity factor of 0,9, reduces the peak demand to $0,9 \times 103 = \underline{93\text{kVA}}$.

For the purpose of determining whether the Municipality has sufficient spare capacity in their network to supply this phase of the Development, allowance needs to be made for a possible high of 120kVA and low of 80kVA.

9.2 Phase 1 and 2 (master plan)

Item	Description	kVA
(i)	Phase 1 – Filling station and convenience shop	103
(ii)	Phase 2:	
	• Erf 2 - 175 Amps 3 phase	69
	• Erf 3 - 300 Amps 3 phase	120
	• Erf 4 - 400 Amps 3 phase	138
	• Erf 5 - 400 Amps 3 phase	207
	• Erf 6 - 200 Amps 3 phase	138
	• Erf 7 - 200 Amps 3 phase	276
	• Erf 8 - 100 Amps 3 phase	276
	• Sundry load (street lighting, etc)	10
	TOTAL	1 337

Applying an overall network diversity of 0,7 reduces the peak demand to $0,7 \times 1\,337 = 936\text{kVA}$.

This could result in a possible high of 1 000kVA and a low of 800kVA.

The abovementioned peak demand figures will also be used to determine the municipal Capital Contribution, i.e. the Development's contribution towards the upgrading or usage of the municipal primary MV network.

Annexure C contains a letter, dated 17 March 2017, from the Municipality confirming that their MV network has sufficient spare capacity to supply Phase 1.

Annexure D contains CMB's letter of 9 November 2017 to the Municipality to confirm that their MV network also has sufficient spare capacity to supply the combined load of Phase 1 and 2.

10.0 POINT OF CONNECTION / SUPPLY

For economic reasons, mainly to reduce the initial capital layout to the Developer for Phase 1, it is proposed that a different and lower cost Point of Connection / Supply be made available from the Municipality's MV network for Phase 1 compared with Phase 1 and Phase 2 combined, as per the master plan.

This means that the initial supply capacity required (Phase 1) will be much lower ($\pm 93\text{kVA}$) compared with Phase 1 and 2 combined ($\pm 936\text{kVA}$).

The supply network to Phase 1 will also be temporary and later be replaced with a permanent supply network that will supply both Phase 1 and 2.

The supply network can therefore also be considered to have two (2) phases.

10.1 Phase 1

Drawing No. 11689/E/SK02 depicts the proposed Point of Connection as well as the Point of Supply to the consumer. This drawing also depicts the existing municipal MV network in the vicinity of the Development.

10.1.1 Point of Connection

It is proposed that the Point of Connection be at the location of the existing municipal 16kVA pole mounted transformer substation on the Airport Line, i.e. a vertical construction, 32mm², copper, 3 phase, bare conductor overhead line.

At this location it is proposed that a 200kVA (minimum municipal standard size) pole mounted transformer substation be erected for connection via 11kV drop-out fuses and lightning arrestors to the 11kV conductors of the Airport Line. The 11kV fuses and lightning arrestors are to be of the Transformer Combi-unit type.

The transformer (11kV to 400/230 volt) is to be a hermetically sealed unit (welded cover) with open bushings, zinc metal sprayed and painted to coastal finish.

All equipment described hereafter is to meet the technical specification of the Municipality.

10.1.2 Point of Supply

It is proposed that from the LV bushings of the pole mounted transformer (mounted on galvanized steel channels fixed to a wooden pole structure) a $\pm 70\text{mm}^2$ copper (or aluminium equivalent) x 4 core PVCAS cable be taken to a ground mounted Meter Kiosk (coastal painted 306 stainless steel or fibre glass), which will house the mains circuit breaker (± 175 Amps), multi-function kWh meter and modem (remote meter reading) together with its associated current transformers and voltage reference circuit. The meter will be the Municipality's standard meter for this application to make a Bulk LV Supply available to the Development at either Tariff 3.A or 3.C (Time of Use). This means that the total consumption of Phase 1 (the filling station) will be metered at this point.

The LV terminals of said meter will become the Point of Supply to the filling station.

10.2 Phase 1 and 2 combined

Drawing No 11689/E/SK03 depicts the proposed master plan for the Development, indicating the Point of Connection to the municipal MV network as well as the Points of Supply for the individual erven.

10.2.1 Point of Connection

It is proposed that a temporary 11kV Ring Main Unit (RMU) be cut into the underground 11kV cable between the Fancourt Substation and the Airport Substation, in the position shown on the Drawing, as the initial Point of Connection. The T-off circuit breaker of the RMU will serve as the initial radial (spur) feeder for the substations within the Development.

Once more development takes place in the area (for example North West of this Development), it is proposed that the internal substations and future substations in the adjacent area (approximate positions shown on Drawing) be placed on a ring feed by diverting the 11kV cable (cut and through-joint) from Point A via the substations to Point B (remove RMU – cut and through joint cable to Airport Substation). This will also require upgrading of the existing 70mm² aluminium x 3 core MV cable between the Municipality's Fancourt and Airport Substations and removing the section of existing MV cable between Points A and B. It is to be noted that the latter work is only indicated as a Master Plan so that the Municipality can view the MV network to be included in this Development in relation to possible future developments in the adjacent areas. This means that this Development's Internal Network needs to be approved on its own and is not subject to conditions that can be imposed by adjacent land owners or developers.

It is recommended that the cable between Points A and B be at least 120 mm² Aluminium x 3 core of the PILCA type.

The RMU is to be of the SF6 outdoor type enclosed in a 304 stainless steel cubicle with doors, coastal painted and mounted on a concrete plinth.

In the case of both Phase 1 on its own and Phase 1 and 2 combined, the extensions required to the existing municipal MV network outside the boundaries of the development phase is considered to be the External Network.

10.2.2 Points of Supply

It is proposed that the new Point of Supply for the filling station as well as the Point of Supply for the industrial erven be the LV meter kiosks forming part of the Internal Network and detailed hereafter.

The mains circuit breaker and multi-function kWh meter and modem, together with its associated current transformers and voltage reference circuit, for the filling station and the industrial erven respectively, will be housed in the kiosks in the positions shown on the Drawing, from where underground service connection cables will be taken to the Main LV Boards of the buildings on the erven.

The kiosks and relevant tariffs will be the same as described for Phase 1.

This Development is to be an "Open Development", meaning that there will be no access control and all roads and the entire electrical network including the Internal Network will be taken over by the Municipality on completion. This would therefore also mean that the LV terminals of said meters will become the Point of Supply for all the erven, or the consumers' supply points.

11.0 **INTERNAL NETWORK**

11.1 Phase 1

The Internal Network or Service Connection will consist of a $\pm 70\text{mm}^2$ copper x 4 Core PVCAS cable plus a $\pm 35\text{mm}^2$ bare copper conductor (earth wire) laid underground between the LV meter kiosk and the Main LV Board at the filling station / convenience shop building.

11.2 Phase 1 and 2 combined

The Internal Network will consist of the following:

- (i) 11kV RMU at the Point of Connection.
- (ii) Underground 11kV cable (minimum 120 mm² Aluminium x 3 core PILCA) feeding internal substations, following the route as shown on the Drawing. This cable will be extended to the North West boundary for future connection to a cable to Point A via other substations to form a ring feed.
- (iii) Two (2) miniature substations (both 800kVA rating) for transforming from 11kV to LV to supply the meter kiosks, in the positions shown on the Drawing.

Each substation will contain an 11kV RMU of the SF6 type, transformer and LV board, all within in galvanized steel or 304 stainless steel cubicles, coastal painted and mounted on a concrete plinth.

- (iv) Underground LV PVCAS cables plus earth wires (sizes to be given during detailed design stage) interconnecting the substations with the meter kiosks.

- (v) Meter kiosks as detailed above, with the front compartment for the meters and the rear compartment for main distribution. Each compartment will have its own door to be fitted with padlocks.
- (vi) Streetlights are not shown on the Drawing, but will be provided meeting the Municipality's requirements.

The service connection cables (with the exception of the filling station as previously described) will be installed as and when required by the industrial erven, at the Consumer's cost.

All items mentioned above will meet the requirements of the Municipality and once a service connection has been completed, the Contractor undertaking the work will provide the Municipality with a copy of the Certificate of Compliance (COC) for the internal installation downstream from the meter kiosk (service connection plus electrical installation at building/s).

12.0 PROGRAMME

It is expected that permanent power to Phase 1 will only be required towards the end of 2018.

It cannot be determined at this stage when power will be required for Phase 2.

13.0 TAKING OVER OF NETWORK

The Municipality will be required to take over the extended External Network and the Internal Network on completion, and be responsible for the operation and maintenance thereof. The property owners will be responsible for the service connections and the electrical installation within the buildings.

Drawings and a specification for said networks will be submitted to the Municipality, and be approved by them before construction commences. On completion a full set of as-built drawings (electronic and hard copy) together with test certificates and manuals for the equipment will be handed to the Municipality. The electrical Consulting Engineer for the project will also certify that all work has been completed in accordance with the approved drawings and specification. Regular meetings will be held with the Contractor responsible for the work, where a representative from the Municipality's electrical department will also be present.

The necessary permits will be obtained from the Municipality where any work is to be carried out on the municipal network, and safety will be of prime importance.

14.0 COSTS

It is assumed that the total construction cost of the extension to the External Network and the Internal Network will be for the account of the Developer, which will be done by an Electrical Contractor approved by the Municipality and appointed by the Developer. This work will be done under the supervision of the Developer's Consultants, i.e. CMB, who will have a registered professional engineer or technologist in charge of the project.

The Developer will also be responsible for paying the Municipality a Capital Contribution charge, of which a preliminary calculation is as follows:

Phase 1

- (i) Number of Equivalent Erven = $93/\text{kVA} \div 10 \text{ kVA/Equivalent Erf} = \underline{9.3}$.
- (ii) Total charge = $9.3 \times \text{R } 15\,978\text{-}00/\text{erf} = \underline{\text{R } 148\,595\text{-}40 \text{ plus VAT}}$.

Phase 2

- (i) Number of Equivalent Erven = 936kVA (total Phase 1 & 2) – 93kVA (Phase 1) = 843kVA ÷ 10 kVA/Equivalent Erf = 84,3 x R 15 978/erf = R1 346 945-40 plus VAT.

Total Phase 1 and 2 = R148 595-40 + R1 346 945-60 = R 1 495 540-80 plus VAT.

This is based on the 2017/18 municipal financial year charge, and it is assumed that same will be adjusted in terms of the municipal financial year in which the payment is made.

The Municipality could elect for the Developer to spend this amount or part of it to upgrade the municipal MV network supplying the Development. In such a case the work will be undertaken by the Developer's Contractor under the supervision of CMB and meeting the requirements of the Municipality.

15.0 SERVICES AGREEMENT

This agreement is the services agreement between the Municipality and the Developer and will include a section on the electrical services.


This Services Report can form the basis for said electrical section of the Services Agreement.

16.0 ENVIRONMENTAL MANAGEMENT PLAN

All electrical work undertaken will comply in all respects with the Environmental Management Plan, which will form part of the Electrical Specification for this project.

17.0 CONCLUSION

It is trusted that this report provides the required information for inclusion in the EIA report and rezoning application, and can also serve as a basis for the Services Agreement.

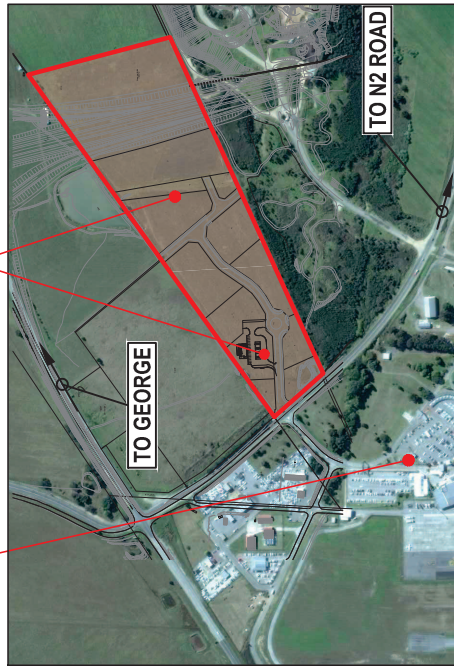
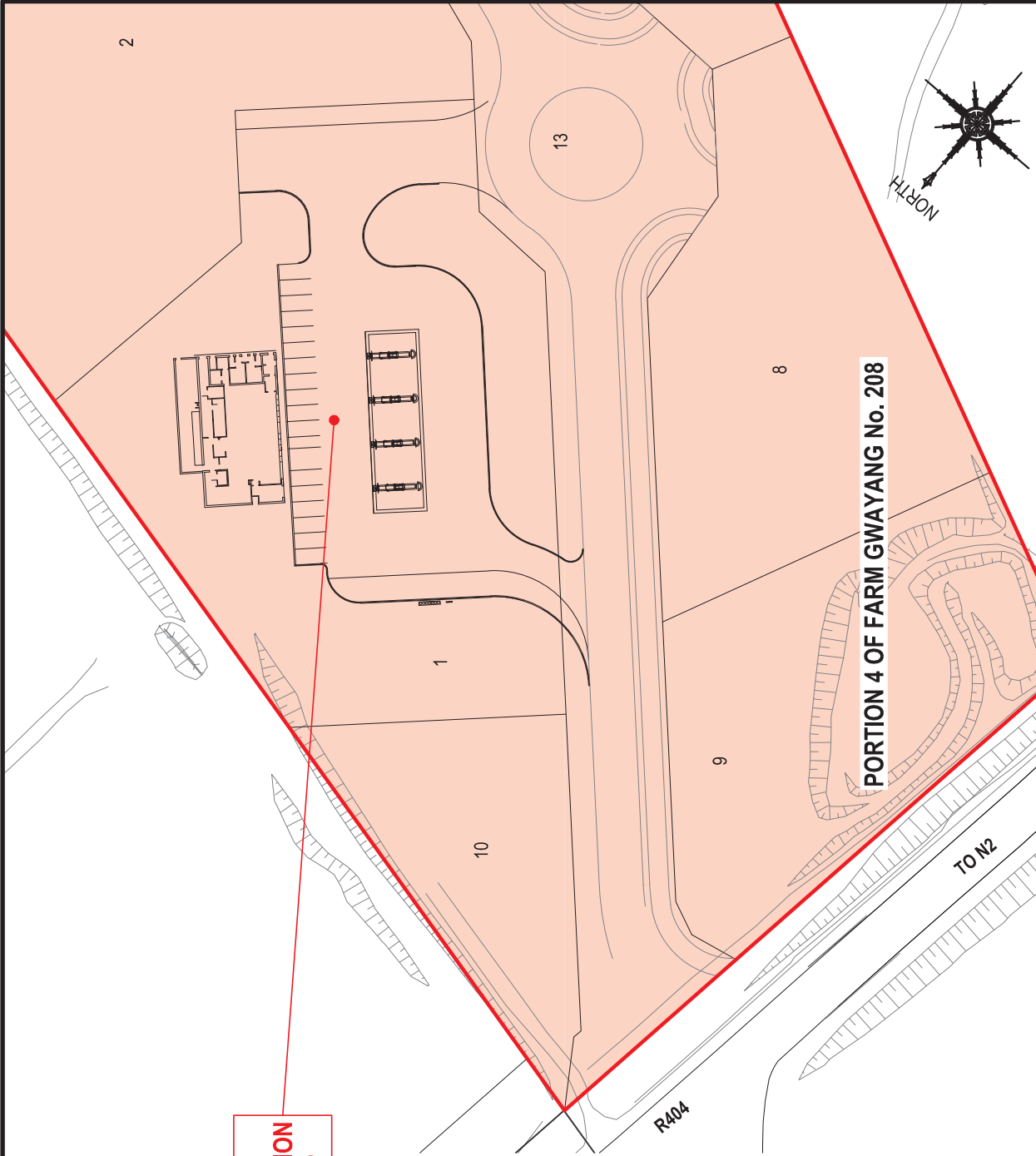


**Pierre Conradie Pr Eng Pr CPM
CLINKSCALES MAUGHAN-BROWN (SOUTH) (PTY) LTD**

LOCATION OF PROPOSED
DEVELOPMENT

PHASE 1: LOCATION OF
PROPOSED FILLING STATION
AND CONVENIENCE SHOP

AIRPORT

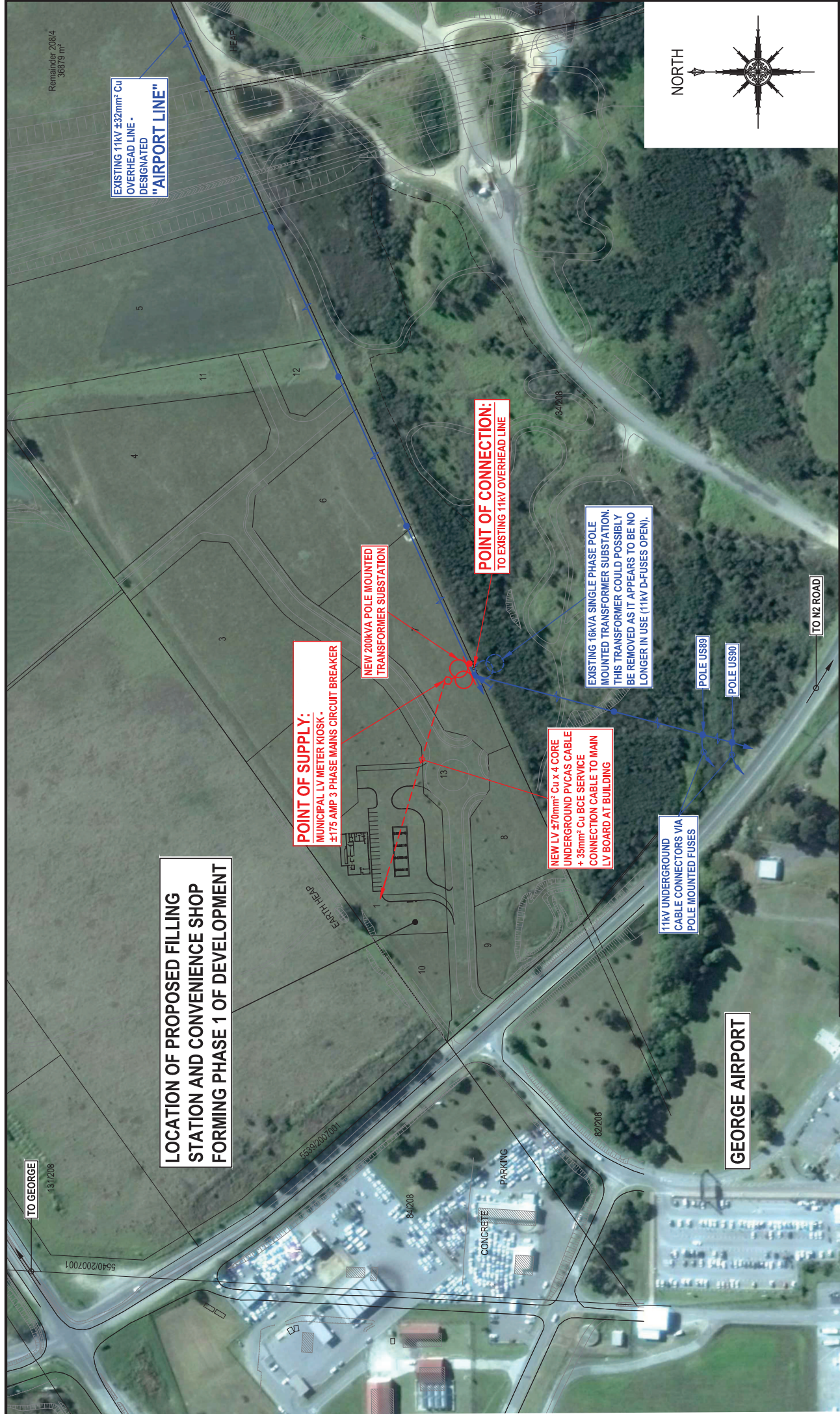


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CLIENT
8 MILE INVESTMENTS 236
(PTY) LTD

PROJECT
**PROPOSED FILLING STATION AND AIRPORT SUPPORT
DEVELOPMENT ON PORTION 4 OF THE FARM
GWAYANG NO. 208, DIVISION GEORGE**

DRAWN FB	DESIGNED FPC	CHECKED GSA	APPROVED
SCALE N.T.S.	DATE 09-03-2017	CAD REF No. 11689-E-SK01	DWG-SIZE A4
DRAWING NO 11689/E/SK01	REVISION C 12-12-2017		



APPROVED

CHECKED

DESIGNED

DRAWN

GSA

FPC

FB

DATE

SCALE

CAD REF No.

1:2000

11689-E-SK02

29-03-2017

REVISION

B

11689/E/SK02

DRAWING NO

PROJECT

PROPOSED FILLING STATION AND AIRPORT SUPPORT DEVELOPMENT ON PORTION 4 OF THE FARM GWAYANG NO. 208, DIVISION GEORGE

DRAWING TITLE

PHASE 1: FILLING STATION: PLAN LAYOUT SHOWING PROPOSED ELECTRICAL CONNECTION TO GEORGE MUNICIPALITY'S NETWORK

CLIENT

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CESA

CLINKSCALES MAUGHAN-BROWN (PTY) LTD (2016/0759601)

LEGEND

BLUE: EXISTING MUNICIPAL 11KV NETWORK

RED: PROPOSED EXTENSION TO MUNICIPAL 11KV & LV NETWORK

PHOTOGRAPHS



Photograph No 1



Photograph No 2



Photograph No 3



MUNISIPALITEIT
Wes Kaap

UMASIPALA WASE
Intshona - Koloni

MUNICIPALITY
Western Cape

Posbus/ PO, Box 19 George 6530 Tel: 0448019111 Fax: 0448733776

NAVRAE: **S. van der Merwe**
ENQUIRIES:
TEL: **044 – 801 9111**

VERW/REF: Filling Station – Portion 4 of Farm Gwayang 208, Division George

17 March 2017

By E-mail: pconradie@cmbgeorge.co.za

Clinkscapes Maughan-Brown
PO Box 2551
George
6530

Attention: Mr Pierre Conradie

Dear Sir

**PROPOSED FILLING STATION AND CONVENIENCE SHOP ON ERF 1 OF PORTION 4
OF THE FARM GWAYANG NO 208, DIVISION GEORGE: CONFIRMATION ON
AVAILABILITY OF ELECTRICAL SUPPLY FROM GEORGE MUNICIPALITY'S
ELECTRICAL DISTRIBUTION NETWORK**

With reference to the recent meetings between yourselves and officials from the Municipality's electrical department, and your e-mail of 9th instant and attached Drawing No 11689/E/SK01, we wish to confirm the following:

- 1) Based on your calculation of the estimated peak kVA demand of 103 kVA, with a possible high of 120 kVA and a low of 80 kVA, it can be confirmed that there is sufficient spare capacity in the nearby municipal 11 kV network to supply this development.
- 2) An LV bulk metered 11 kV supply can be made available on the Southern boundary of the development by upgrading an existing pole mounted transformer substation to 200 kVA or extending an existing 11 kV overhead line to a new 200 kVA pole mounted transformer substation closer to the main building of the development.
- 3) This connection will be further considered and final comments provided once yourselves have submitted a Services Report to this department.

We trust this information is sufficient for yourselves to proceed with the Services Report.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Steyn van der Merwe', written in a cursive style.

Steyn van der Merwe
Senior Manager: Electrotechnical Services



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Our ref: GSA/gsa/11689

9 November 2017

Senior Manager: Electro Technical Services
Electrical Department
George Municipality

By E-mail
(Svdmerwe@george.gov.za)

Attention: Mr. Steyn van der Merwe

Dear Sir,

PROPOSED FILLING STATION AND INDUSTRIAL DEVELOPMENT ON PORTION 4 OF FARM GWAYANG NO. 208, DIVISION OF GEORGE

With reference to your letter of 17 March 2017 and a meeting of 30 October 2017 at your offices between ourselves and officials from the Municipality's electrical department, we wish to confirm the following:

- 1) The development will consist of a Phase 1 and a Phase 2. Phase 1 will be for the proposed filling station and convenience shop. Phase 2 will be for seven (7) industrial erven.
- 2) Based on our calculations, the estimated peak kVA demand for Phase 1 will be 93kVA, with a possible high of 110kVA and a low of 80kVA.
- 3) For Phase 1 together with Phase 2 it will be 936kVA, with a possible high of 1000kVA and a low of 800kVA.

Your advice is confirmed that the existing municipal Medium Voltage (MV) network in the area of the development should have adequate supply capacity to supply Phase 1 and Phase 2.

This office is currently busy finalising the revised Services Agreement, of which a copy will be forwarded to your department for official comments and approval before this matter is taken further.

We trust that you will find the above in order.

Yours faithfully

Stiaan Adams Pr Tech Eng
CLINKSCALES MAUGHAN-BROWN

cc. George Municipality Electrical Department: Mr. Deon Esterhuysen
(Rgesterhuysen@george.gov.za)
CMB: Mr. Pierre Conradie (pconradie@cmbgeorge.co.za)

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• R LAMPRECHT PrEng • RC PALMER PrEng • RL STEENEKAMP PrEng PrCPM • A ZEELIE PrTechEng

ASSOCIATES: • GS ADAMS PrTechEng • M GATYENI PrTechEng • SG MEGGERSEE PrEng
• MG TSOSANE PrTechEng • SR WEBB PrTechEng
CONSULTANT: FP CONRADIE PrEng PrCPM

8 MILE INVESTMENTS 236 (PTY) LTD

ELECTRICAL SERVICES REPORT

FOR

**PROPOSED DEVELOPMENT ON PORTION 4 OF THE FARM
GWAYANG NO. 208, GEORGE**

REPORT NO: G/11689/R1

Revised: 1 September 2021

Prepared by:

Clinkscapes Maughan-Brown (South) (Pty) Ltd.
39 Victoria Street
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Contact: R. Steenekamp
Tel. No. 044-8741511



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1.0 **INTRODUCTION**

This report has been prepared by Clinkscales Maughan-Brown (CMB) at their George office, who have been appointed by the Developer, as the Electrical Consultants for this project. The purpose of this report is to provide the necessary information on the proposed electrical services within this Development and the connection to the existing municipal network in the area, in order to obtain all the necessary statutory approvals and to draw up a services agreement.

2.0 **LOCATION**

The planned development is on Portion 4 of the farm Gwayang 208, located near the George Airport.

The property to be developed is currently zoned as Agricultural.

The proposed development includes for the property to be subdivided and rezoned as follows and indicated on Drawing No. 11689/E/01, which is attached as Annexure A:

- Business Zone VI (service station).
- Industrial Zone VI (light industry)
- Agricultural Zone I.

3.0 **SUPPLY AUTHORITY**

The Supply Authority for the area is George Municipality, and therefore their Electricity Department was consulted on matters related to the electrical services.

4.0 **BASIS OF REPORT**

The report is based on the following:

- (i) CMB Services Report No. G/11689/R1 dated December 2017.
- (ii) Subsequent comments received from Messrs. S. vd Merwe and P. Gerber from George Municipality's Electricity Department during meeting held on 7 November 2018.
- (iii) Guidelines for distribution connection charges for loads (NRS 069:2018 Edition 2).
- (iv) Site development plan dated 2 August 2021 prepared by Messrs Marike Vreken Urban & Environmental Planners.
- (v) Information obtained from Mr Steyn vd Merwe, the previous head of planning at George Municipality's Electricity Department, during a meeting held on 23 August 2021.
- (vi) Site inspection with Mr. Sarel du Preez from George Municipality's Electricity Department on 26 August 2021.
- (vii) General information received from the Client and other members of the professional team of this and the adjacent developments.

5.0 **DEMAND**

Based on the information currently available, the peak kVA demand of the Development has been calculated as follows:

Phase 1	199kVA
Phase 2	382kVA
Phase 3	311kVA
Phase 4	<u>21kVA</u>
Total estimated after diversity demand	912kVA

A detailed calculation of the above is attached as Annexure B.

This is a provisional calculation and will be finalized after all the network load particulars have been concluded.

The following objectives will be set to reduce consumption:

- Comply with SANS 10400.
- Energy efficient light fittings, air conditioning, mechanical ventilation, refrigeration and water heating installations, electric motors, etc.
- Use of LPG gas instead of electrical appliances for cooking where economically feasible.
- Use of energy efficient appliances.
- Building and plant load management systems to reduce power consumption in the case of the industrial erven.
- Installation of Photo Voltaic (PV) and other Small Scale Embedded Generators (SSEG), where it can be economically justified.

It is expected that with the implementation of these measures, consumption could be reduced by approximately 20%.

6.0 **AVAILABILITY OF CAPACITY**

Based on the existing zoning of the property, is assumed that the existing capacity is 10kVA.

The new capacity is estimated at 912kVA. Thus, the additional capacity required is estimated at 902kVA.

The Municipality previously indicated that some 103kVA is available on the existing network in the area. Additional capacity will have to be transferred to the site by the link services to be provided, as indicated under Item 7.0 below.

As part of the environmental approval process, a letter of confirmation on the availability of capacity is normally required from George Municipality's Electrical Department.

7.0 **BULK AND LINK SERVICES**

It is envisaged that the planned Airport Support Zone developments (Gwayang 208 Portions 4, 130, 131, 132 and 139) will be supplied from a new 11kV switching station to be established as near as possible to the intersection of the R102 and the R404. This switching station will be linked to the Municipality's existing Heatherpark 66/11kV substation via the existing and proposed "Mulberry" 11kV overhead lines on a ring supply. In future this supply will be connected to the Proefplaas Substation after the necessary 66/11kV transformer bay has been established, which is in line with the Gwayang Local Spatial Development Framework dated September 2015.

The proposed network strengthening required to make the additional capacity for the Airport Support Zone developments available, is as follows and as indicated on attached Drawing No. 11689/E/01:

- Upgrading of ± 1800 metres of existing 35mm² Cu vertical construction overhead line along the R102 between pole no's SL46 and US90 to "Mulberry" conductor.
- New ± 1000 metres of "Mulberry" vertical construction overhead line along the R102 from pole no. US90 up to the R404 intersection.

- Upgrading of ± 890 metres of existing 16mm² Cu horizontal construction overhead line near the Strawberry Farm between pole no's US13 and 37 to "Mulberry" conductor. Alternatively a new section of "Mulberry" overhead line could be constructed along the road to by-pass the aforementioned section.
- New brickbuilt 11kV switching station building located as near as possible to the R102 / R404 intersection. A provisional position has been allocated for this switching station inside the proposed development on Portion 130.
- Two 11kV incomer circuit breakers, three 11kV feeder circuit breakers and a bus-section switch inside the abovementioned switching station building.
- New 300mm² Al 11kV underground cable between existing "Mulberry" overhead line pole no. USWL7 and the new 11kV switching station.
- New 300mm² Al 11kV underground cable between new "Mulberry" overhead line terminal pole and the new 11kV switching station.
- Relocation of the existing 70mm² Al 11kV cable currently terminated at pole no. USWL7, feeding the airport, to the new switching station.

The abovementioned will allow an estimated additional firm capacity of 3500kVA to be transferred to the Airport Support Zone. All developments in this Zone should be required to make a contribution towards this link services cost on a pro-rata basis as described under Item 12.0 below.

It is proposed that the points of connection to the existing municipal network be as indicated on the drawing.

8.0 **INTERNAL SERVICES**

This development will be supplied from a 185mm² Al 11kV underground ring cable which is connected at the abovementioned new switching station as indicated on the drawing.

All cables and electrical equipment will be installed in servitudes, road reserves and open spaces and will be accessible to the Municipality at all times.

It is proposed that the Municipality take-over the entire internal electrical network on completion thereof. The Municipality will become the owner and be responsible for operating and maintaining same. For this reason, the installation would have to comply with their technical requirements and supply conditions.

The point of connection for each of the individual erven will be at the low voltage busbars of the proposed miniature substations. Each individual consumer will be responsible for the supply and installation of the service connection cable between the miniature substation and the erf when this service is required.

It is envisaged that bulk metering points will be made available at low voltage depending on the actual demand of the supplies required. The point of supply for each portion will be finalised once more detailed information is available.

Each consumer will have to enter into a separate supply agreement with the Municipality and the standard municipal tariffs will be applicable.

Streetlights along public roads will be in accordance with the municipal standards and those along private roads may not be the municipal standard. The latter type will not be taken-over, must be separately metered, and will have to be maintained by the Body Corporate / Home Owners Association.

It is noted that there is an existing municipal 11kV overhead line that runs in a servitude along the Southern boundary of the development which is the present main supply to the Airport.

9.0 **TECHNICAL PARTICULARS**

All drawings and specifications of the proposed network must comply with the Municipality's technical requirements and must be submitted to them for official approval before any construction can commence.

The new 11kV switching station will be a brick building ($\pm 10\text{m} \times \pm 5\text{m}$) and be located on a separate erf or servitude dedicated for this purpose.

The 11kV switchgear to be installed inside the new switching station will be the metal-enclosed, indoor, compact, modular, vacuum type, similar to the Schneider Premset.

The 11kV cable type will be the paper insulated, lead covered with three stranded aluminium conductors, Table 17.

The distribution substation/s will be the fully enclosed miniature type housing a 11kV ring main unit of the SF6 insulated ABB or Schneider type, 11kV/420V transformer and low voltage (LV) distribution equipment and area lighting control equipment.

The Low Voltage (LV) network will not be installed by the Developer.

Public road streetlights will be the municipal standard luminaire mounted on a galvanised steel pole. Private road lights could be a different type to suit the architectural theme.

The internal network will be designed so that any internal faults do not cause nuisance tripping of the upstream municipal network.

No switching of supplies or work in close proximity of existing cables / overhead lines will be carried out without prior arrangement with the Municipality's electrical department. The Electrical Contractor will also be required to liaise with the Municipality's civil department and communication service provider/s to ensure that no damage is caused to existing underground piped services during construction.

10.0 **ENVIRONMENTAL REQUIREMENTS**

All work will comply in all respects with the relevant environmental management requirements.

11.0 **PROGRAMME**

The development will be phased. It is expected that construction of services will commence immediately after all the necessary approvals have been received and the feasibility has been accepted. It is expected that the total peak demand of the development will be reached over a period of between 1 and 10 years.

12.0 **CAPITAL COSTS**

The Developer will be responsible for the following:

- (i) Supply and installation of link services to establish additional capacity in the area of the development. Based on the abovementioned proposal and layout, the total cost is roughly estimated at R7.1M, excluding VAT and escalation. This cost should be shared on a pro-rata basis based on the demand of the proposed Airport Support Zone developments.
- (ii) Supply, installation and commissioning of the complete internal network and connecting to the new 11kV switching station as described above.

- (iii) Standard municipal development charges towards bulk infrastructure to be calculated by George Municipality. It is understood that a new guideline was recently compiled in this regard, and that there are numerous considerations when these calculations are to be done. It is proposed that the calculations be discussed with the Developer before same is finalized and the services agreement is compiled.

Of particular importance is the level at which the Development is taken to connect in the shared network, and thus its contribution to shared networks. In view of the significant link services to be provided by the Developer, it is proposed that the level of connection in this case be considered to be at HV/MV level, which will ultimately be at the SS-Proefplaas 66/11kV Substation.

All work will be done under the direction of the Developer's Electrical Consultant, i.e. Messrs Clinkscapes Maughan-Brown, and by an Electrical Contractor to be approved by the Developer and the Municipality.

13.0 **CONCLUSION**

We trust that this information is sufficient to obtain the necessary statutory approvals for the development and to draw up the services agreement.

Please contact the writer should more information be required.

In order to speed-up the process, we will also forward a copy of this report directly to the Municipality's electrical department, for their approval and any further comments they may have.



R.L. Steenekamp Pr Eng Pr CPM
CLINKSCALES MAUGHAN-BROWN

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ANNEXURE A

Drawing No: 11689/E/01 – Plan layout of proposed MV electrical network.

ANNEXURE B

Electrical Load Estimate

CLINKSCALES MAUGHAN-BROWN: ELECTRICAL LOAD ESTIMATE

PROJECT: Proposed development on Portion 4 of Gwayang 208, George
 DATE: 01-Sep-21
 DRAWING REFERENCE: 11689

Erf No.	Zoning	Erf m ²	kVA per m ² (NRS069)	Coverage *	ADMD kVA at LV bus	Diversity factor **	ADMD kVA at Point of Delivery
<u>EXISTING ZONINGS</u>							
208/4	Agricultural	110,433			10	1.00	10
Existing capacity							10
<u>PROPOSED ZONINGS</u>							
Phase 1							
1	Business Zone VI ***	9,930	0.04	1.0	397	0.50	199
							199
Phase 2							
3	Industrial Zone I	7,790	0.04	0.75	234	0.50	117
4	Industrial Zone I	7,852	0.04	0.75	236	0.50	118
5	Industrial Zone I	9,837	0.04	0.75	295	0.50	148
							382
Phase 3							
6	Industrial Zone I	7,266	0.04	0.75	218	0.50	109
7	Industrial Zone I	13,436	0.04	0.75	403	0.50	202
							311
Phase 4							
Remainder	Agricultural Zone I	36,959			42	0.50	21
							21
New capacity							912
Additional capacity							902
* Coverage is used in calculation instead of FAR due to typical development in George and George network circumstances. ** Diversity between various loads downstream from the 11kV Point of Connection. *** 0.04 kVA/m ² is used based on statistical data for similar filling station developments in George.							

Stormwater Management Plan

Portion 4 of the Farm Gwayang No 208

Submission date: 16 March 2018

Prepared by:

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1. Introduction

1.1. Background to Report

8 Mile Investments is in the process of rezoning and subdividing Portion 4 of the Farm Gwayang no 208, situated opposite the main entrance road to George Airport in the Western Cape. The current zoning of the property is deemed to be “Agriculture Zone I”. The property is approximately 11ha in extent.

The land use application to be lodged to George Municipality will be for:

- i The subdivision of Portion 4 of the Farm Gwayang No 208 into 14 Portions (7 x Industrial Zone I portions; 1 x Business Zone VI portion; 1 x Transport Zone II portion; 4 x Open Space Zone II portions & 1 x Agriculture Zone I portion (the Remainder)) in terms of Section 15(2)(d) from the Land-Use Planning By-Law for George Municipality, 2015;
- ii The rezoning of Portion 4 of the Farm Gwayang No 208 from “Agriculture Zone I” to “Subdivisional Area” in terms of Section 15(2)(a) from the Land-Use Planning By-Law for George Municipality, 2015.

ICE was appointed to design roads and services for the proposed township, which includes the necessary infrastructure to collect and control stormwater runoff.

1.2. Location of Development

The property is situated to the east of the R404 at the intersection with the George Airport main access road. The site locality plan is shown in **Figure 1** below.



Figure 1: Site Locality Plan

1.3. Objective of Report

The objective of this report is to propose methods for the management of stormwater runoff using attenuation structures.

2. Future development scenario

2.1. Future Development

The property is currently undeveloped and is used for agricultural activities. The property is 11.0433ha in size and the intention of the owner is to rezone and subdivide the property. The proposed economical land-uses within the township will consist of Industrial Zone 1 and Business Zone VI.

The Floor Space Ratio will be limited to 50% to allow for adequate space for landscaping and retention or detention ponds.

The proposed Stormwater Management Plan drawing is attached in **Annexure A**.

2.2. Proposed stormwater control measures

The objective is to limit the amount of post-development runoff which is discharged to not exceed the pre-development discharge in a major storm. It is therefore proposed that excess discharge be managed on site by temporarily storing the runoff until it can be discharged once the storm peak has passed. This can be achieved by supplying stormwater attenuation facilities on each stand.

A typical stormwater runoff hydrograph is presented in Figure 3 below. The hydrograph indicates the management of the post-development peak flow with the use of attenuation facilities.

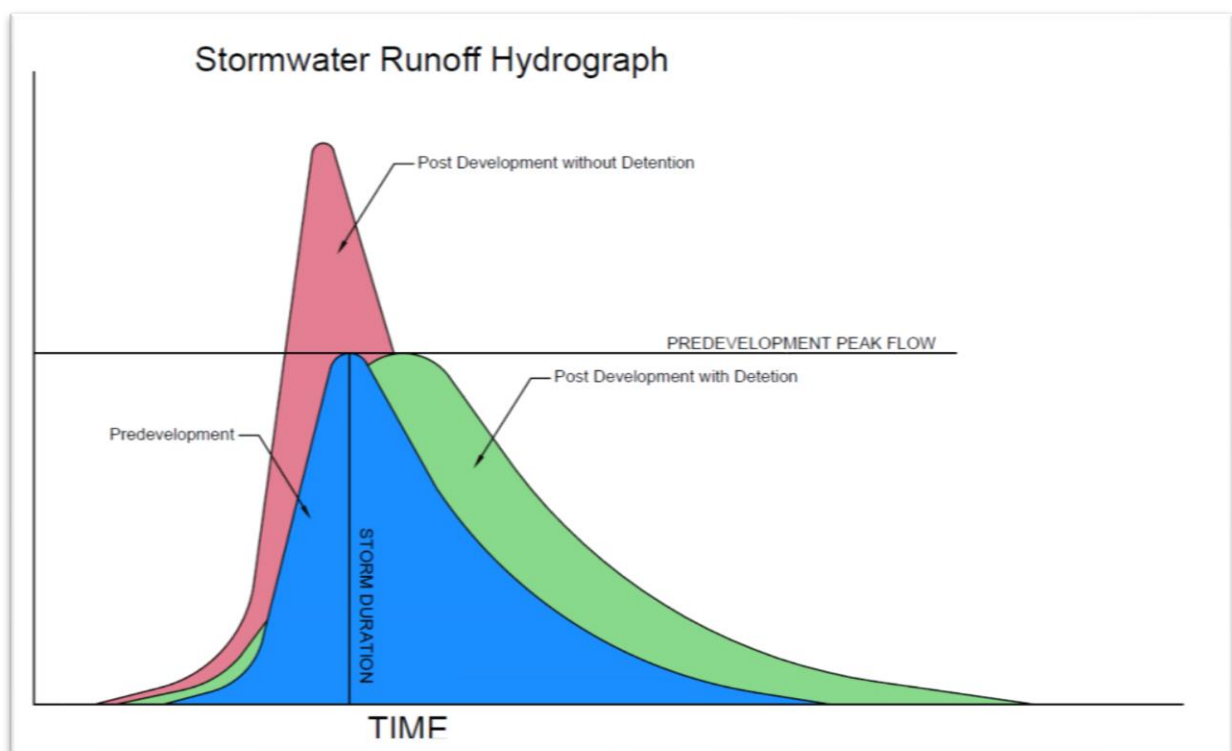


Figure 2: Stormwater Runoff Hydrograph

Attenuation facilities can also improve the quality of runoff water as sedimentation can take place within the ponds. Sand filters must be installed at the inlets to the ponds to further improve the quality of the water.

Runoff from the internal road network will be channelled into stormwater inlets. From the inlets the water will run in a pipe network to the various attenuation ponds.

3. Design, Operation and maintenance

The detail design of the stormwater drainage on each stand must be done by a professional engineer. After completion the system must be approved by a professional engineer.

Once the stormwater facilities have been constructed, the maintenance and monitoring thereof will remain the responsibility of the owners of the erven.

The landscaping of the attenuation facilities and other stormwater structures, such as open drains, must be done by a landscaping architect.


4. Conclusion

The proposed township development on Portion 4 of the Farm Gwayang no 208 is subject to the responsible management of stormwater runoff. On-site attenuation facilities have been proposed to ensure that post-development runoff which is discharged do not exceed the pre-development discharge in a major storm event.

ICE trusts that these proposals will enable the necessary approvals to be granted for the development.

[illegible]



				DESIGNED BY	PWVDB	DESIGNED BY INFRASTRUCTURE CONSULTING ENGINEERS cc  PO BOX 186 PERSEQUOR PARK 0020 Tel (012) 349-2022/3/4/5 Fax (012) 349-2026	PROJECT DESCRIPTION		APPROVED <small>(Full signature)</small>	DATE	SHEET	
				CHECKED	DBJ		PORTION 4 OF THE FARM GWAYANG NO 208			2018/07/11	A1	
				DRAWN	PWVDB		PLAN DESCRIPTION			SCALE	REVISION	
				CHECKED	DBJ		STROMWATER LAYOUT PLAN			1:1500	01	
NO	DATE	DESCRIPTION	REVISED BY						DATE	PLAN NO.		
AMENDMENTS										01		

**FRESHWATER ASSESSMENT FOR THE PROPOSED GEORGE AIRPORT
SUPPORT ZONE - PORTION 4 OF FARM 208 GWAYANG, GEORGE**

MAY 2018



Prepared By:



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EXECUTIVE SUMMARY

The landowner (8 Mile Investments 236 (Pty) Ltd) of Portion 4 of Farm 208 Gwayang, George proposes to develop the site by constructing a filling station and associated services. The filling station is located near the George Airport and is intended to provide a support service to the expanded airport related land uses. This freshwater assessment report is intended to inform the environmental and water use authorisation processes for the proposed project.

The study area is located in the K30B quaternary catchment, within the catchment of the Gwaing River. The tributary of the Gwaing River at the site flows through the George Airport before flowing south of the site and into the Gwaing River. The stream is joined by two smaller tributaries that cross the site. A small valley-bottom wetland is associated with the larger watercourse.

The watercourses in the area are mapped Ecological Support Areas and the lower sections of the larger tributary of the Gwaing River (that is south of the site) is mapped as aquatic Critical Biodiversity Areas (CBA) where the two stream confluence and the valley bottom wetland areas occur. The wider river corridor is mapped as riparian forest CBAs. The valley bottom wetland area associated with the Gwaing River is also mapped as a Freshwater Ecological Priority Area (FEPA) wetland. No FEPA wetland features are mapped within the site.

Both the watercourses and the valley bottom wetland area within the site are considered to be in a seriously modified ecological condition with extensive loss of ecological functionality as a result of cultivation of the area as well as the instream dams. The larger tributary of the Gwaing River to the south of the site is in a better ecological condition and is moderately to largely modified as a result of the construction of the airport and the associated activities and the invasion of the riparian zone with alien invasive plants.

The smaller watercourses within the site are considered to be of a low ecological importance and sensitivity while the larger tributary and valley bottom wetland are of a moderate ecological importance and sensitivity due to the habitat that provides as well as the link that it helps to provide between the coast area and the hillslope.

Due to the fact that the watercourses within the site are highly modified and of a relatively low ecological importance and sensitivity they do not pose a significant constraint to the proposed development of the site. They do however act as conduits for the movement of water through the landscape with the larger watercourse to the east occurring within a relatively wide and deep valley. This functionality of the watercourses is recognised within the biodiversity conservation mapping of the area where the watercourses are mapped as ecological support areas. These corridors and the associated functionality should thus preferably be maintained within the development proposal as far as possible.

*A corridor of approximately 20m for the larger watercourse and 10m for the smaller watercourse is recommended to accommodate stormwater flow within the site. These areas would need to be sized to accommodate the potential flow through the site. The watercourses and their instream dams near the southern boundary of the site can be incorporated into the stormwater management system for the site. The watercourses could possibly be shaped as open swales that are planted with wetland vegetation such as *Juncus effusus*, *Carex gloerabilis*, *C. clavata*, *Isolepis prolifera*, *Pycneus polystachyos*, *Zantedeschia aethiopica* within the wetter bed together with buffalo grass *Stenotaphrum secundatum* along the banks.*

The incorporation should as far as possible lead to the longer term improvement of the aquatic habitat within the watercourses on site and more importantly adequately mitigate any potential downstream impacts on the valley bottom wetland and watercourse south of the site. The dams in particular should assist with mitigation of the increased intensity of the runoff from the site that the final flow from the site is allowed to overflow from the ponds into the downstream watercourse and wetland area in a dispersed manner.

The number of crossings of the watercourses for infrastructure (roads, water and sewer pipelines) should be minimised and as far as possible limited to one position (i.e. at the road crossing or dam/pond wall). It is also recommended that the pump station be located further away from the larger watercourse corridor, preferably to the west of the internal road, that the road could provide a buffer and management area in which any possible spills from the pump station could be prevented from discharging into the downstream wetland area. Additional mitigation may be required at this pump station to ensure that any spills that may occur are adequately maintained on site and do not spill into the downstream wetland area.

*The introduction of exotic and alien invasive plants (in particular kikuyu grass *Pennisetum clandestinum*) for landscaped areas should be avoided. It is recommended that alien vegetation control measures take place throughout the undeveloped open areas of the site such as within the corridors and stormwater management areas. Control of nuisance growth of bulrush *Typha capensis* is likely to also be required on an ongoing basis to encourage growth of indigenous vegetation.*

Also of significance are the more ecologically important tributary of the Gwaing River and the valley bottom wetland area that are downstream of the site. Any potential impacts of the proposed development should be mitigated on site to prevent any further degradation of these aquatic ecosystems it is recommended that the two existing dams within the site located on the downstream edge of the two watercourses before they leave the property should be utilised to mitigate any stormwater impacts from the developed site. The incorporation should as far as possible lead to the longer term improvement of the aquatic habitat within the watercourses on site and more importantly adequately mitigate any potential downstream impacts on the valley bottom wetland and watercourse south of the site.

Alternative 1 is likely to have the greater potential impact on the watercourses and valley bottom wetland area within the site as well as the watercourse and wetland area directly downstream (south) of the site due to the fact that it will entail development of most of the site. With mitigation however the potential impact of the development of the site would still be low. Alternative 2 will largely only impact on the smaller western tributary while the No-go Alternative will entail the status quo within the site being maintained, i.e. the watercourses within the site will remain in their existing degraded ecological condition and there would be no potential risk of further impacts to the downstream aquatic ecosystems.

In terms of the proposed layout, the risk of altering the ecological status of the aquatic features within the site as a result of the proposed development of the site is considered to be low for the construction phase and operational phase. The need for sewerage pipelines to cross the two watercourses within the site, as well as the proposed pump station near the larger watercourse and wetland area will however imply that the proposed works will be excluded from the General Authorisations and that a water use licence will need to be applied for, for Section 21c and i water uses.

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1. BACKGROUND

The landowner (8 Mile Investments 236 (Pty) Ltd) of Portion 4 of Farm 208 Gwayang, George proposes to develop the site by constructing a filling station and associated services. The filling station is located near the George Airport and is intended to provide a support service to the expanded airport related land uses. A tributary of the Gwaing River passes to the south of the property, with two smaller watercourses crossing the site (Figure 1). The focus of this report is to assess the freshwater features that may be impacted by the proposed development activities as well as to describe potential impacts of the proposed development and provide recommended mitigation measures.

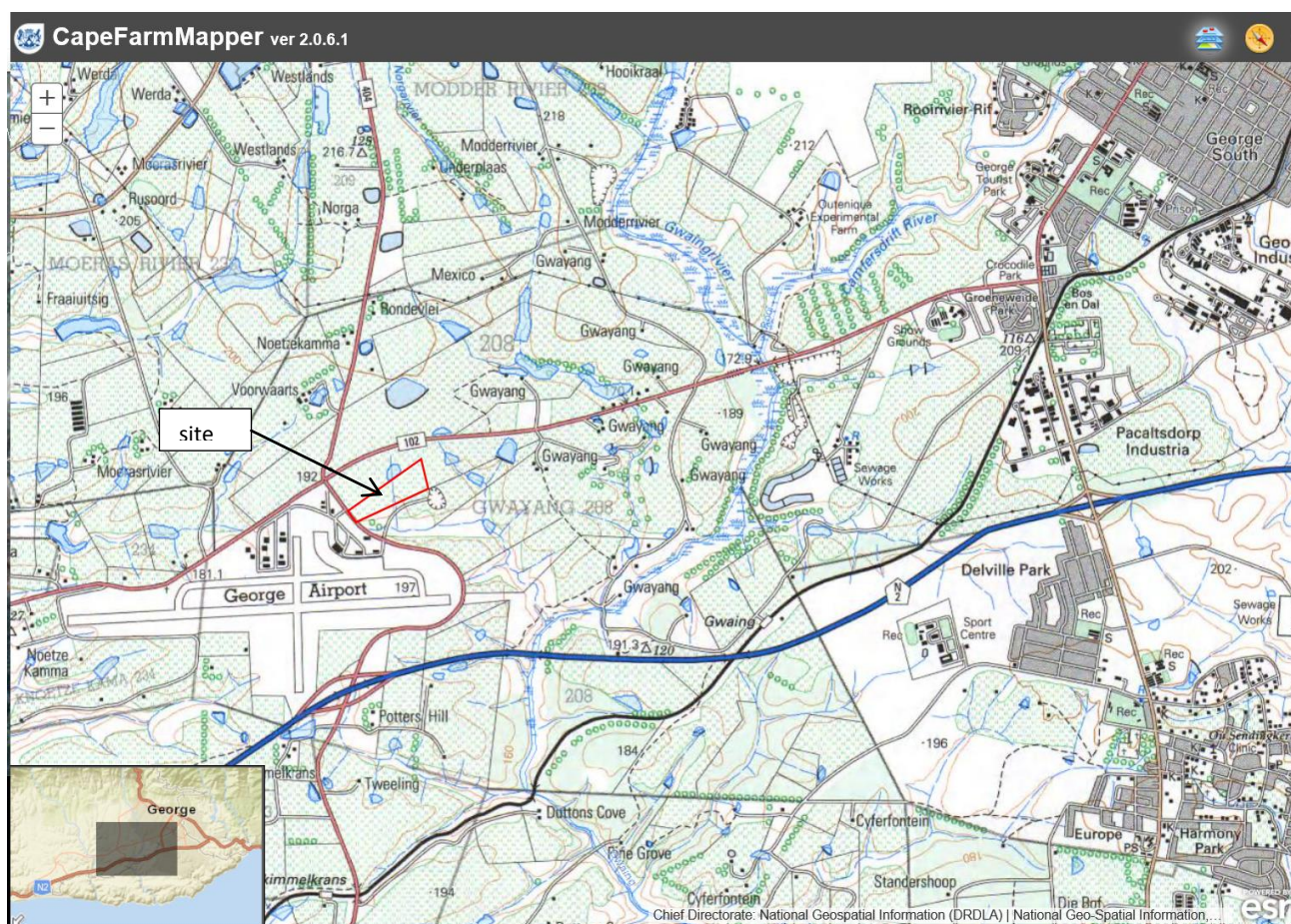


Figure 1. Locality map of the study area (CapeFarmMapper, 2017)

Table 1: Key water resources information

Descriptor	Name / details	Notes
Water Management Area	Breede-Gourits WMA	
Catchment Area	Gwaing River	
Quaternary Catchment	K30B	
Present Ecological state	D – Largely Modified	Department of Water Affairs, 2012, for Gwaing River (Appendix C)
Ecological Importance and Sensitivity	Ecological Importance – Moderate Ecological Sensitivity – High	
Water resource component potentially impacted	Tributary of the Gwaing River and its tributary and associated wetlands	
Latitude	33°59'53"S	Centre of site
Longitude	22°23'08"E	

2. TERMS OF REFERENCE

The agreed upon scope of works for this **freshwater assessment** is as follows:

TASK 1: FRESHWATER ECOSYSTEM OPINION ASSESSMENT AND RISK ASSESSMENT

- 1.1 *Initialisation*
- 1.2 *Site assessment*
- 1.3 *Freshwater assessment and assessment report*
- 1.4 *DWS risk assessment for water use authorisation consideration*
- 1.5 *Review and liaison*

TASK 2: WATER USE AUTHORISATION APPLICATION FOR SECTION 21 C AND I

- 2.1 *Collate relevant information*
- 2.2 *Pre-application consultation meeting with BGCMA*
- 2.3 *Section 21 c and i water use authorisation application*
- 2.4 *Submission of application*
- 2.5 *Liaison and review*

3. ASSUMPTIONS AND LIMITATIONS OF THE STUDY

Input into this report was informed by a combination of desktop assessments of existing freshwater ecosystem information for the study area and catchment, as well as by a more detailed field assessment of the freshwater features at the site. The site was visited in winter (June 2017) as well as in the spring (October 2017) as the preferred seasons to undertake the assessment although it should be noted that the Western Cape is experiencing a particularly dry period. During the field visit, aquatic features within the site were mapped using a handheld GPS. The characterisation and integrity assessments of the freshwater features were also undertaken.

The SANBI Biodiversity GIS and CapeFarmMapper websites were consulted to identify any constraints in terms of fine-scale biodiversity conservation mapping as well as possible freshwater features mapped in the Freshwater Ecosystem Priority Areas maps. This information/data was used to inform the freshwater related recommendations.

Limitations and uncertainties often exist within the various techniques adopted to assess the condition of ecosystems. The following techniques and methodologies were utilized to undertake this study:

- Analysis of the freshwater ecosystems was undertaken according to nationally developed methodologies for water resource protection and aquatic ecosystem assessments; and
- Recommendations are based on professional opinion and best practise guidelines.

The level of assessment was deemed to be adequate for the proposed project.

4. USE OF THE REPORT

This report reflects the professional judgment of its authors. The full and unedited content of this should be presented to the client. Any summary of these findings should only be produced in consultation with the authors.

5. OVERVIEW OF THE STUDY AREA AND PROJECT PROPOSAL

5.1. OVERVIEW OF STUDY AREA

The site is located opposite the entrance to the George Airport on Main Road 347 between the Old National Road to George and the N2 National Road. The proposed and authorised new western bypass road is aligned along the eastern boundary of the site. The property is currently vacant, with no improvements, and is used as grazing for cattle. Apart from the George Airport, the immediate area surrounding the property is characterised by agricultural activities. A small tributary of the Gwaing River drains to the south of the property with two smaller tributaries crossing the site. An existing dam is located in the south-west corner of the site.



Figure 2. View of the site as seen from the south-western corner of the site with the small dam in the foreground

5.2. ACTIVITY DESCRIPTION

The Proponent wishes to develop Portion 4 of Farm 208, Gwayang in the George Area. Two development alternatives are being considered:

Alternative 1 (Preferred Alternative): Subdivision of Portion 4 of the Farm Gwayang No 208 into fourteen portions (Figure 3): Seven Industrial Zone I erven; a Business Zone VI erf; a Transport Zone II erf; four Open Space Zone II erf and an Agricultural Zone I (the Remainder). The Industrial Zone I erven will be used for warehousing and airport support services while the Agriculture Zone I erf (the Remainder) will

allow for the proposed by-pass road through the site. A proposed traffic circle will be constructed at the existing entrance to the George Airport. Access to the proposed development will be via the proposed new traffic circle. The new proposed filling station will include four filling pumps, nineteen parking bays and a service station shop. The proposed filling station will include a quick service restaurant / take-away with limited seating, toilets and an information centre. The Open Space Zone II erven will allow for the natural watercourses to be accommodated undisturbed within the site.

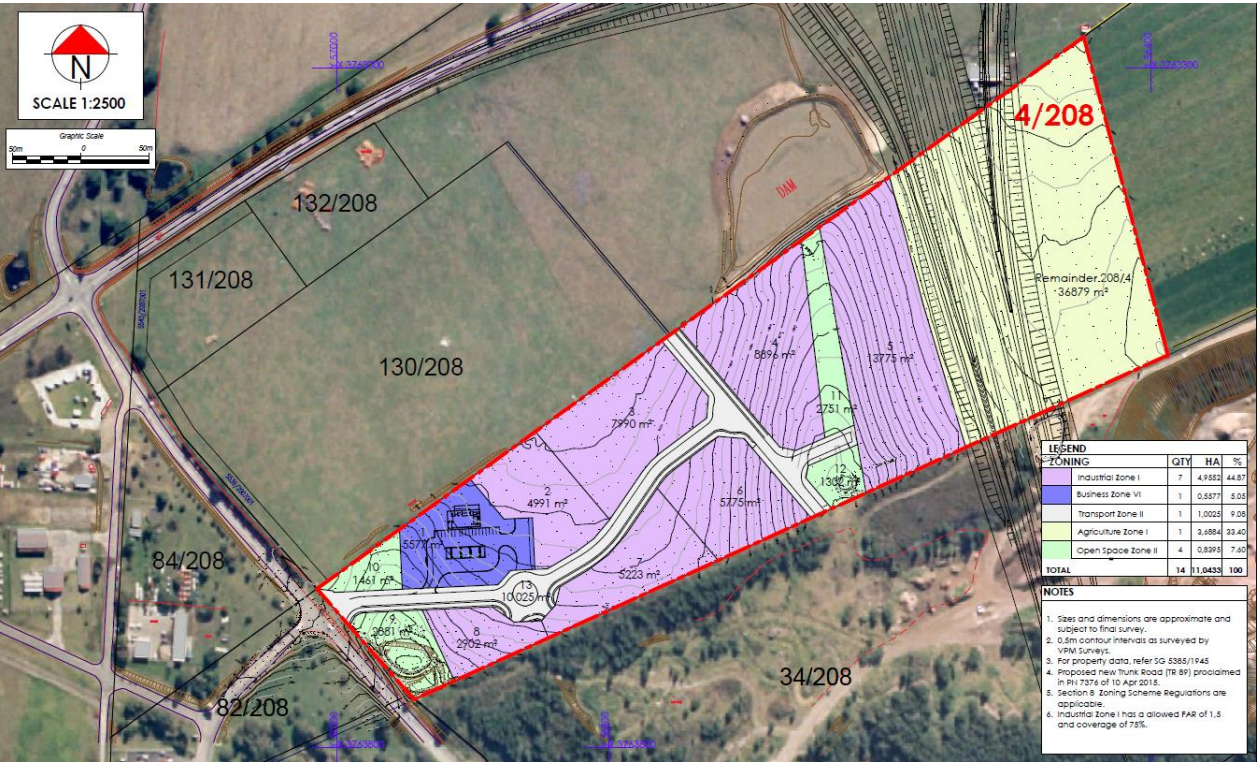


Figure 3. Spatial Development Plan for the Preferred Alternative (Alternative 1)

Alternative 2: This alternative entails the subdivision into three portions and to Rezone Portion A to Business Zone VI for a service station and to rezone Portion B to Business Zone II with a consent use for a supermarket to allow for business and small convenience store on this portion (Figure 4). The remainder will remain Agriculture Zone I. The proposed filling station on Portion A will include four fuel pumps, ten parking bays and a service station shop. Portion B will comprise a retail store and sixty parking bays.



Figure 4. Spatial Development Plan for Alternative 2

Alternative 3: No go Alternative: The current status (Vacant) will be maintained and therefore much needed industrial service infrastructure (airport services) cannot be introduced within close proximity of the George Airport.

6. PHYSICAL CHARACTERISTICS OF THE STUDY SITE

6.1. TOPOGRAPHY

The property is located on low hills within the coastal plain at an altitude of between 180m and 198m above mean sea level. The gradient slopes gently towards the coastline in the south. A small watercourse crosses the site from north to south with a small dam occurring immediately north of the site within the watercourse channel. The watercourse drains into a small tributary of the Gwaing River that flows from west to east, south of the property. A quarry has been excavated within the property to the south of the site.



Figure 5. Ortophotograph of the site (yellow polygon) with the 5m contours, watercourses and dams shown

6.2 CLIMATE

The area normally receives about 599mm of rain per year, throughout the year. It generally receives the lowest rainfall (27mm) in May and the highest (72mm) in October (Figure 6). The monthly distribution of

average daily maximum temperatures shows that the average midday temperatures range from 13°C in July to 20°C in February. The region is the coldest during July when the mercury drops below 7°C on average during the night.

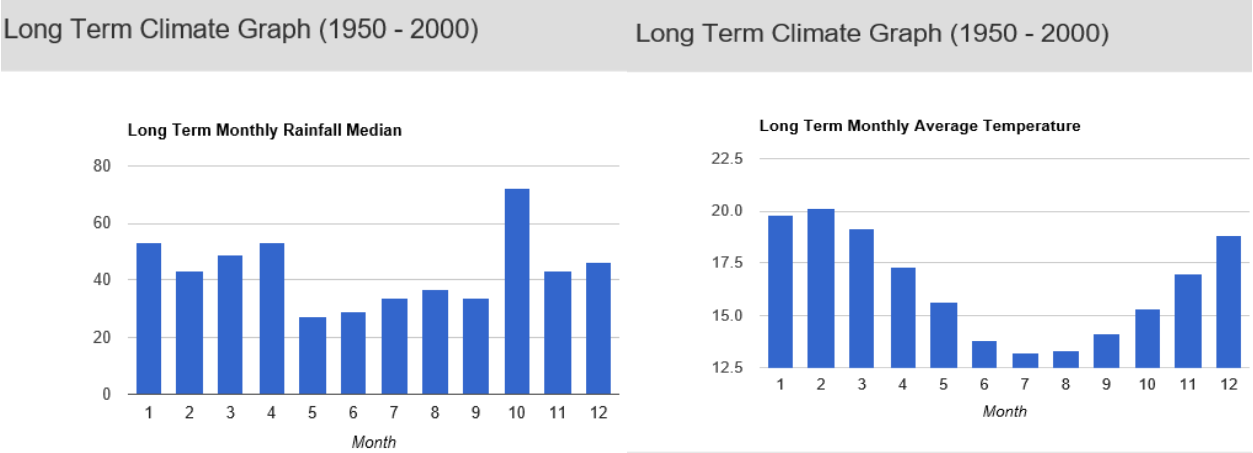


Figure 6. Average monthly rainfall (in mm) and temperatures (°C) (CapeFarmMapper, 2017)

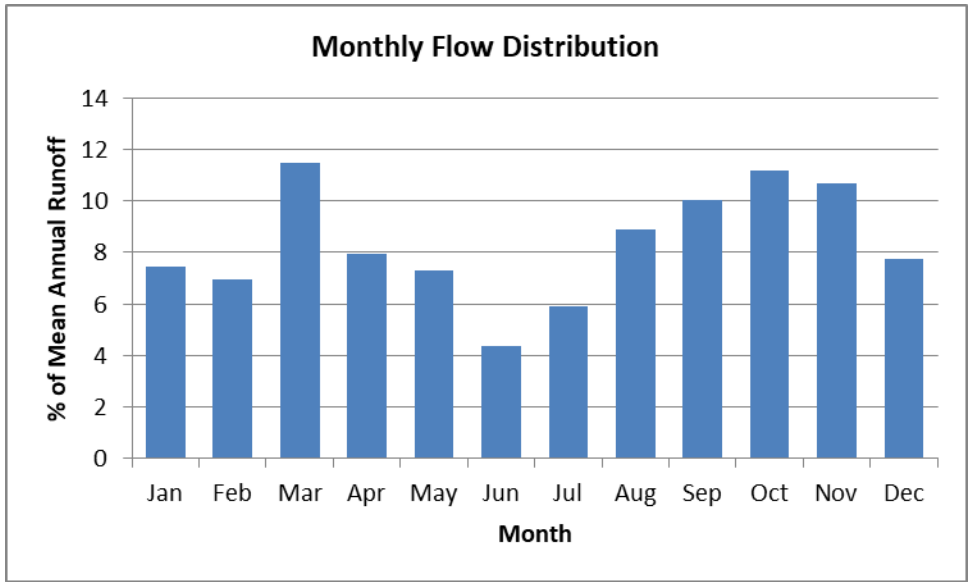


Figure 7. Graph indicating the monthly flow distribution of the watercourses in the area

The runoff for the rivers reflects the rainfall patterns of the area with the highest runoff usually occurring in March and then in the months of September to November (Figure 7).

6.3 GEOLOGY AND SOIL

The site is underlain by gneissic granite and granodiorite with phyllite, schist, grit, hornfels and quartzite of the Kaaimans Group and quartzitic sandstone of the Table Mountain Group, Cape Supergroup. The soils are strongly structured and a non-reddish colour with a marked clay accumulation which is usually conducive to the formation of wetland areas. One or more of vertic, melanic and plinthic soils may be present. The soils have a very high erosion potential. The broad soil classification for the area indicates the soils as being miscellaneous (Figure 8).

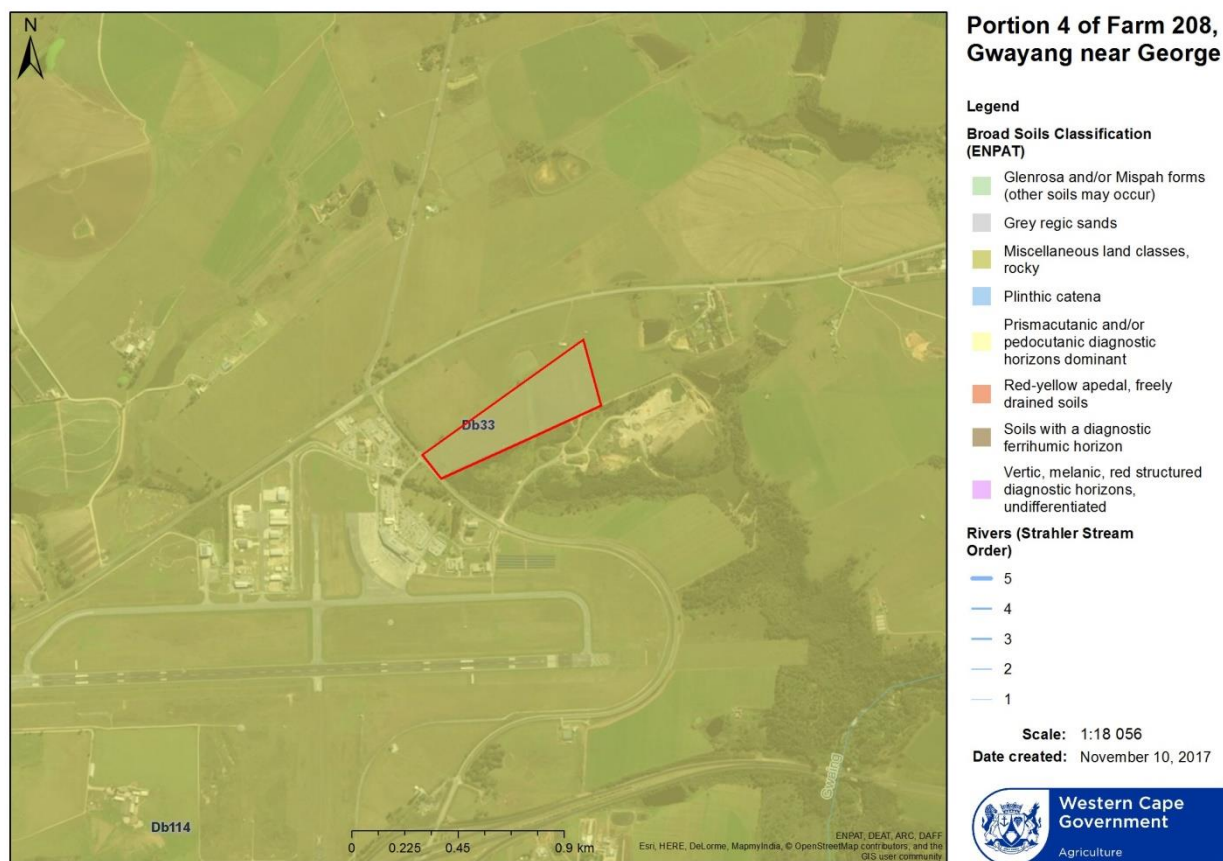


Figure 8. Soil map for the wider area (CapeFarmMapper, 2017)

6.4. FLORA

Mucina and Rutherford (2006) mapped natural vegetation cover in South Africa on a national scale. Due to removal of indigenous vegetation, the mapping was guided by habitat determinants such as geology and soil type. The mapping has been undertaken at a large scale thus the finer scale boundaries of mapped units are often not always very accurate. The mapping has subsequently been updated by the South African National Biodiversity Institute (SANBI) in 2009 and 2012. Figure 9 shows the 2009 update of the mapping of Mucina and Rutherford (2006). There are no differences between the 2009 and 2012 versions of the vegetation map for the study area. Within the garden route area more detailed vegetation mapping was also undertaken by Vlok for the Garden Route Biodiversity Sector Plan and is shown in Figure 10.

The natural vegetation within the site and surrounding area is mapped as being Garden Route Granite Fynbos which is considered to be an Endangered vegetation type (Figure 9). Finer scale vegetation mapping that has been mapped for the Garden Route Biodiversity Sector Plan indicates the natural vegetation within the site to be Wolwedans Grassy Fynbos with Moordkuils Perennial Stream vegetation along the river corridor (Figure 10). The vegetation type is supposed to comprise of dense proteoid and ericoid shrubby grassland however very little of the natural vegetation cover remains and has mostly been replaced by fields cultivated with grasses for grazing.

The riparian vegetation comprises largely of alien plants such as grey poplars *Populus × canescens*, blackwood *Acacia melanoxylon*, black wattle *Acacia mearnsii*, bugweed *Solanum mauritianum*, pampas grass *Cortaderia selloana* and bramble *Rubus* sp. with patches of indigenous plants such as *Senecio halimifolius* *Passerina corymbosa* and *Ficinia nodosa* as well as the translocated *Cyperus papyrus*.

Riverbed grass *Pennisetum macrourum* dominates the valley bottom wetland areas while rushes such as *Juncus effusus* and occur within the dam. Wetland vegetation such as *Wachendorfia thyrsiflora* also occurs within the stormwater drain along the main road.



Figure 9. Vegetation types for the study area (red polygon represents the boundary of the site) (CapeFarmMapper, 2017).

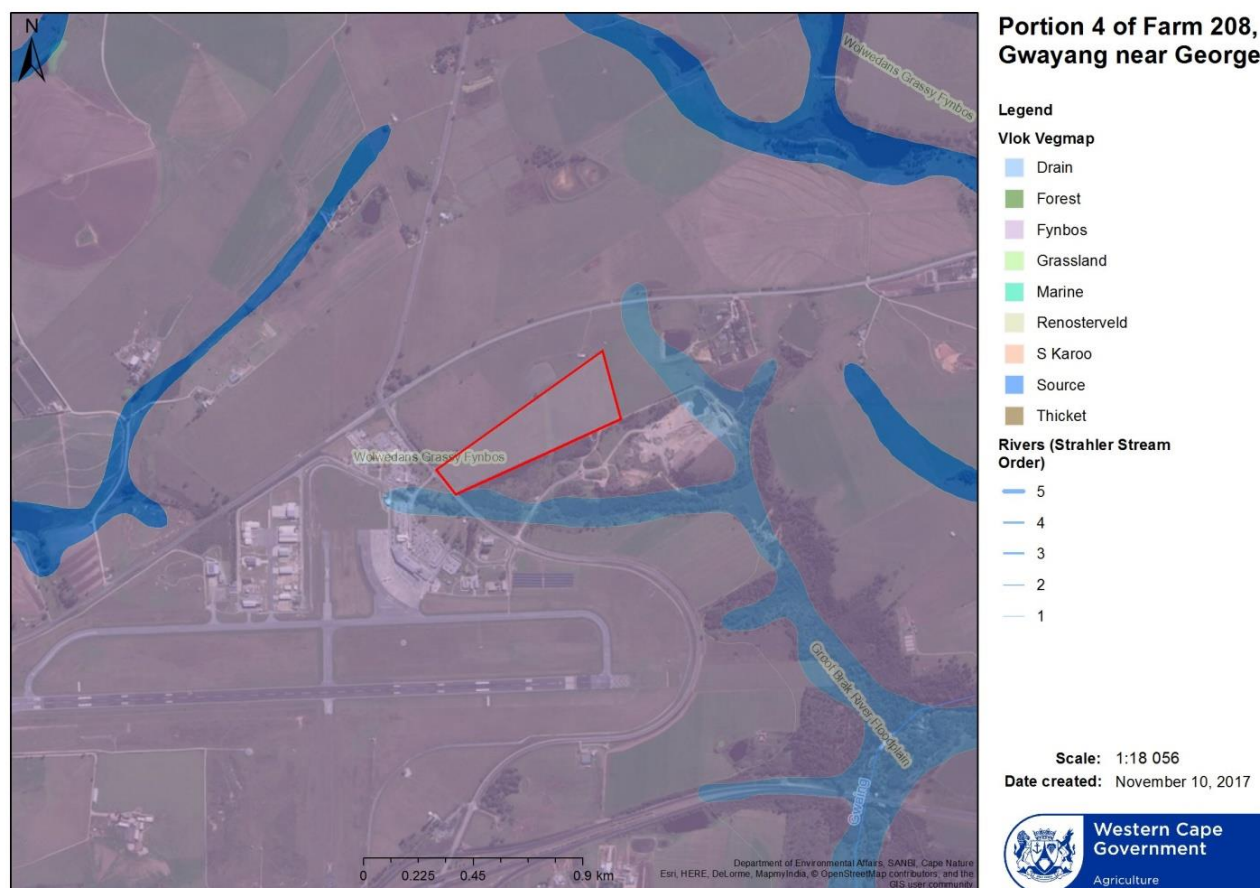


Figure 10. Vlok vegetation mapping for the area (CapeFarmMapper, 2017)

6.5. AQUATIC FEATURES

The study area is located in the K30B quaternary catchment, within the catchment of the Gwaing River. The larger Gwaing River originates as a number of streams flowing off the Outeniekwa Mountains that join to form the Modder River which joins the Malgas River to form the Gwaing River. The Camfersdrift / Rooi River is a tributary of the Gwaing River that rises in George and joins the Gwaing River downstream of the Modder River confluence.

The tributary of the Gwaing River at the site flows through the George Airport before flowing south of the site and into the Gwaing River. Upstream of the site as well as the section of stream flowing adjacent to the site is overgrown with alien trees (primarily black wattle *Acacia mearnsii*) and invasive alien kikuyu grass *Pennisetum clandestinum*. The stream flows within a largely natural channel at the site, passing under the R404/MR347 in a 1.2m pipe culvert. Downstream, the watercourse is joined by two smaller tributaries that flow onto the site from the north. A small valley-bottom wetland dominated by riverbed grass *Pennisetum macrourum* is associated with the larger tributary. Downstream of the site the stream passes to the south of a quarry and is joined by another small tributary of the Gwaing River.

The National Freshwater Ecosystem Priority Areas mapping initiative has only mapped the dam upstream of the site in the smaller tributary as an artificial wetland area (Figure 11).

An evaluation of the ecological status and the ecological importance and sensitivity of the water features is provided in the next section.

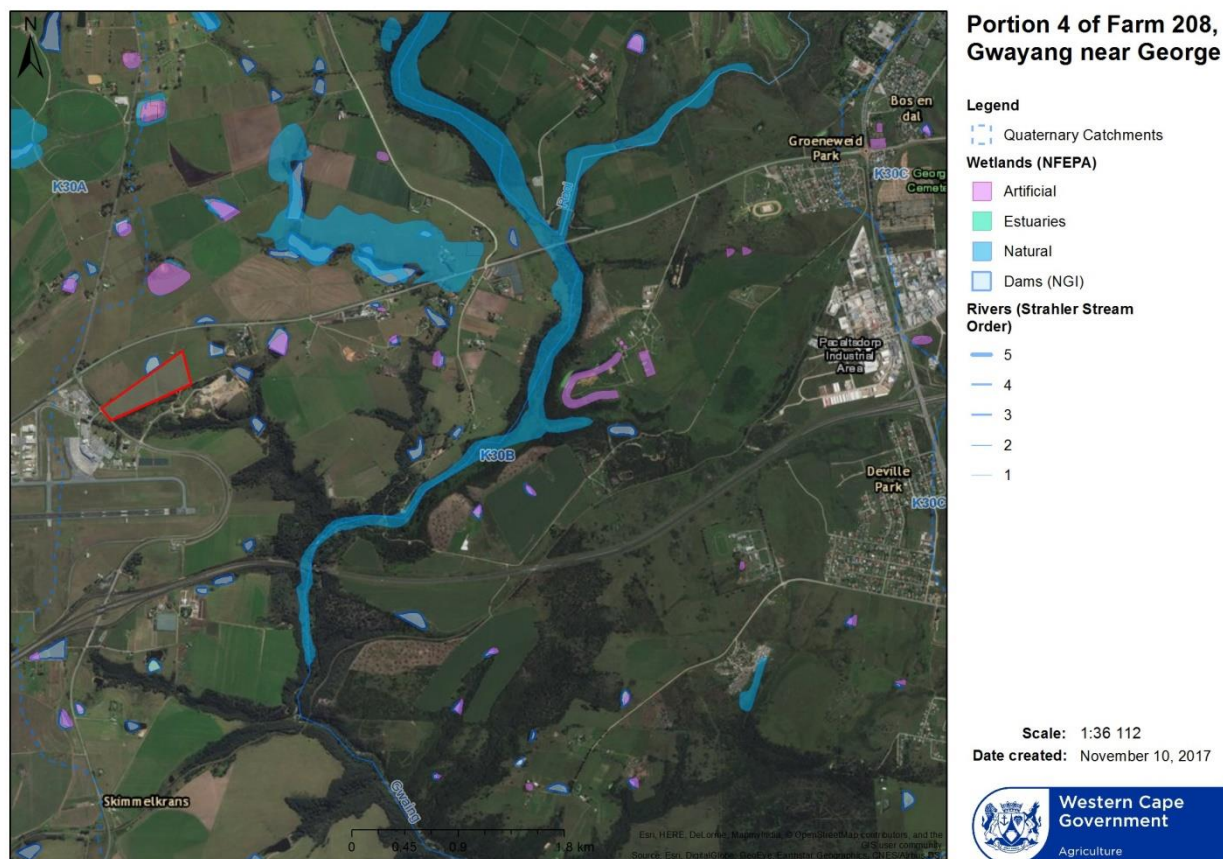


Figure 11. The location of the proposed development site within the G22 catchment with the dams and Freshwater Ecosystem Priority Areas shown (CapeFarmMapper, 2017)

6.6 LAND USE

The area in and surrounding the site (lighter green and brown areas in Figure 12) is mapped as cultivated with the exception of the George Airport which is mapped as urban (purple area). The blue areas indicate the dams within the area. The stream corridors are mapped as ticket or dense bush (green areas). There are no formally protected areas within or adjacent to the site.

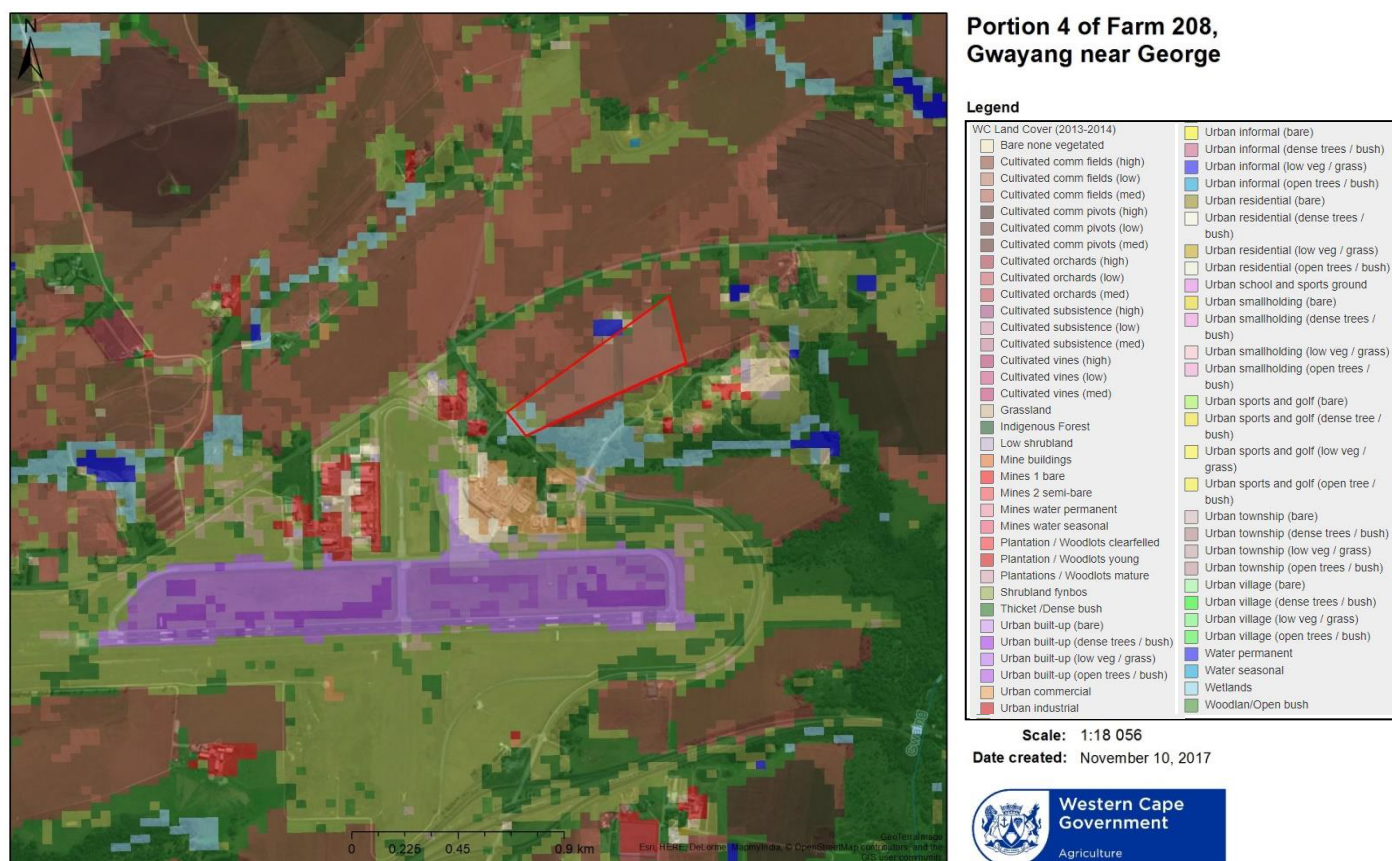


Figure 12. Land use map for surrounding area (red polygon represents the boundary of the site) (CapeFarmMapper, 2017)

6.7. BIODIVERSITY CONSERVATION VALUE

There are two biodiversity mapping initiatives of relevance to the site, the Western Cape Biodiversity Spatial Plan (WCBSP) that contains fine-scale mapping and the national Freshwater Ecosystem Priority Areas (FEPA) map. The Critical Biodiversity Areas (CBA) map compiled as part of the WCBSP for the Garden Route aims to guide sustainable development by providing a synthesis of biodiversity information to decision makers. It serves as the common reference for all multi-sectorial planning procedures, advising which areas can be lost to development, and which areas of critical biodiversity value and their support zones should be protected against any impacts. The CBA map indicates areas of land as well as aquatic features which must be safeguarded in their natural state if biodiversity is to persist and ecosystems are to continue functioning.

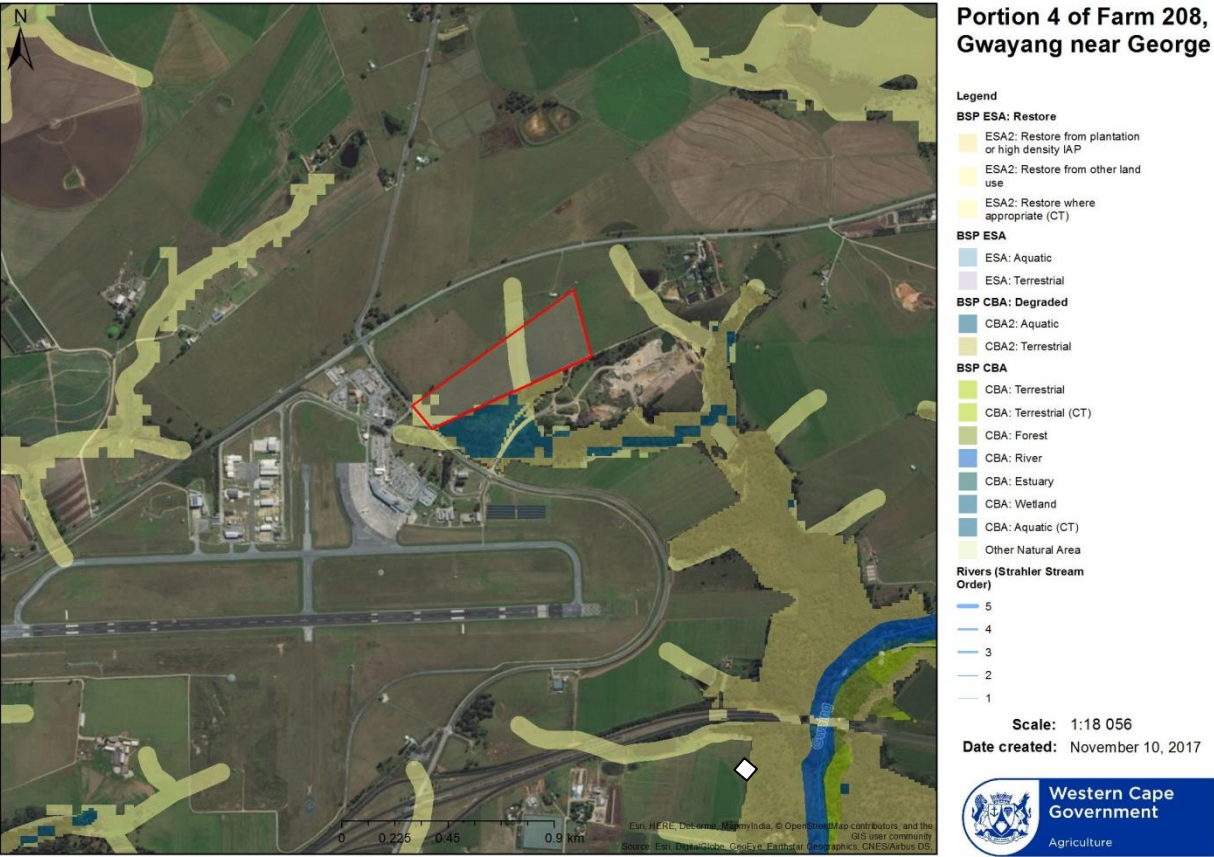


Figure 13. Critical Biodiversity Areas for the area surrounding the study site (red polygon represents the boundary of the site)



Figure 14. FEPA for the area surrounding the study site (SANBI Biodiversity GIS, 2017)

The watercourses in the area are mapped Ecological Support Areas (Figure 13). However, the lower sections of the river, where the two stream confluence and the valley bottom wetland areas occur, is mapped as aquatic CBAs. The wider river corridor is mapped as riparian forest CBAs. These areas have therefore been deemed as important for the conservation of natural ecosystems in the area. Any activities within them should be conducted carefully and disturbances should be rehabilitated.

The larger Gwaing River System is not mapped as a FEPA river however the upper reaches of the river system are considered as Fish Support Areas (pale green area in Figure 14) due to the presence of Longfin eel *Anguilla mossambica*, Cape galaxias *Galaxias zebratus* and Cape kurper *Sandelia capensis*. The valley bottom wetland area associated with the Gwaing River is also mapped as a FEPA wetland. No FEPA wetland features are mapped within the site.

7. ASSESSMENT OF FRESHWATER FEATURES AND THEIR SIGNIFICANCE

7.1. FRESHWATER FEATURES WITHIN THE PROPOSED SITE

7.1.1. PAST DEVELOPMENT OF THE SITE

The past image of the area, taken in 1936 (Figure 15) shows that the area was already significantly modified and cultivated at that time, 80 years ago. The streams follow much the same course today and then. The small valley bottom wetland areas were present along the watercourses at that time although cultivation had taken place within them (only visible as darker areas within the landscape).

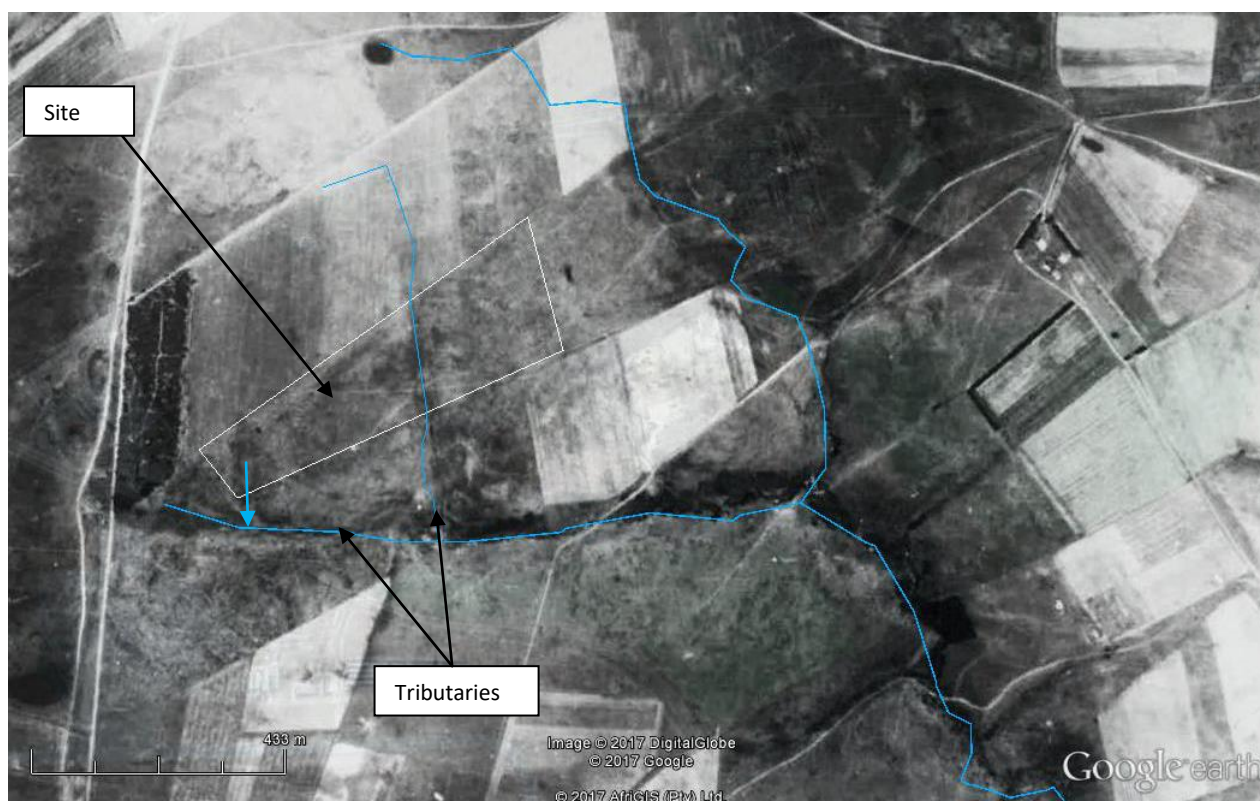


Figure 15. Past aerial image of the study area and surrounding area taken in 1936, overlain in Google Earth with the location of the site and present day watercourses indicated

The small watercourse draining into the dam currently in the south-western corner of the site was more visible at that time (indicated by the blue arrow). The dams within these watercourses had not yet been built. Nor had the larger road network been constructed.

7.1.2. PRESENT DAY SURFACE WATER FEATURES

Present day surface water features associated with the site are shown in Figure 16 and comprise of the following:

Small watercourse draining into the dam in the south-western corner of the site (Watercourse 1) that comprises of simply a grassed channel with no associated aquatic vegetation (Figure 17, top);

Small dam in the south-western corner of the site that receives runoff largely from the stormwater drain along the main road as well as some from the drainage channel mentioned above. The dam is fringed with rushes such as *Juncus effuses* (Figure 17, middle); and

Small tributary that crosses the site and its associated valley bottom wetland area (Watercourse 2) – this feature also comprises largely of grasses and clover *Trifolium* sp. planted with fodder but also contains some low growing sedges *Isolepis* sp. and pennywort *Centella asiatica* (Figure 17, bottom).



Figure 16. Surface water features at the site mapped in Google Earth



Figure 17. View of the aquatic features within the site

Downstream of the site is the less disturbed valley bottom wetland associated with the small tributary (Watercourse 3) that is dominated by riverbed grass *Pennisetum macrourum* (Figure 18, top) and the larger tributary that comprises largely of alien plants such as grey poplars *Populus × canescens*, blackwood *Acacia melanoxylon*, black wattle *Acacia mearnsii*, bugweed *Solanum mauritianum*, pampas grass *Cortaderia selloana* and bramble *Rubus* sp. with patches of indigenous plants such as *Senecio halimifolius* *Passerina corymbosa* and *Ficinia nodosa* as well as the translocated *Cyperus papyrus* (Figure 18, bottom).



Figure 18. View of the valley bottom wetland (top) and tributary downstream of the site (bottom)

Only the watercourses crossing and directly downstream of the site and the valley bottom wetland are assessed further in this section in terms of their present ecological status and ecological importance and sensitivity.

The Present Ecological Status (PES) Methods (DWAF 2005) used to establish the habitat integrity of the wetland and drainage feature were based methods developed by Kleynhans (DWAF, 1999; Dickens *et al*, 2003) where criteria utilised in the assessment of the habitat integrity of the aquatic features was selected based on the assumption that anthropogenic modification of the criteria can generally be regarded as the primary influences on the ecological integrity of a wetland.

Table 2. Results for the Habitat Integrity assessment for the drainage feature

Instream Habitat Integrity	Watercourse 1	Watercourse 2	Watercourse 3
Water Abstraction	14	16	0
Flow Modification	18	16	9
Bed Modification	20	21	10
Channel Modification	15	15	7
Water Quality	10	10	12
Inundation	12	10	6
Exotic Macrophytes	18	17	8
Exotic Fauna	12	12	9
Rubbish Dumping	5	5	10
Instream Integrity Score	30	28	66
INTEGRITY CLASS	E	E	C
Riparian Zone Habitat Integrity			
Vegetation Removal	24	24	12
Exotic Vegetation	20	20	14
Bank Erosion	4	4	9
Channel Modification	15	15	7
Water Abstraction	14	16	0
Inundation	10	10	5
Flow Modification	18	16	9
Water Quality	10	10	12
Riparian Integrity Score	8	5	45
INTEGRITY CLASS	F	F	D

Table 3. Wetland habitat integrity assessment (score of 0=critically modified to 5=unmodified)

Criteria & Attributes	Valley bottom wetland
Hydrological	
Flow Modification	1.5
Permanent Inundation	1.8
Water Quality	
Water Quality Modification	2.8
Sediment Load Modification	2.4
Hydraulic/Geomorphic	
Canalisation	1.5
Topographic Alteration	2.9
Biota	
Terrestrial Encroachment	1.4
Indigenous Vegetation Removal	1.0
Invasive Plant Encroachment	1.4
Alien Fauna	2.5
Over utilisation of Biota	2.2
Total Mean	1.8
Category	E

Table 4. Habitat Integrity categories (From DWAF, 1999)

CATEGORY	DESCRIPTION
A	Unmodified, natural.
B	Largely natural with few modifications. A small change in natural habitats and biota may have taken place but the ecosystem functions are essentially unchanged.
C	Moderately modified. A loss and change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged.
D	Largely modified. Large loss of natural habitat, biota and basic ecosystem functions has occurred.

E	The loss of natural habitat, biota and basic ecosystem functions is extensive.
F	Modifications have reached a critical level and the lotic system has been modified completely with an almost complete loss of natural habitat and biota. In worst instances, basic ecosystem functions have been destroyed and changes are irreversible.

Both the watercourses and the valley bottom wetland area within the site are considered to be in a seriously modified ecological condition with extensive loss of ecological functionality as a result of cultivation of the area as well as the instream dams. The larger tributary of the Gwaing River to the south of the site is in a better ecological condition and is moderately to largely modified as a result of the construction of the airport and the associated activities and the invasion of the riparian zone with alien invasive plants.

The Ecological Importance and Sensitivity (EIS) Assessment of the watercourses and wetland area comprises of a consideration of a number of biotic and habitat determinants that are surmised to indicate either importance or sensitivity. The determinants are rated according to the scale described in Table 4. The median of the resultant score is calculated to derive the EIS category.

Table 5. Scale used to indicate either importance or sensitivity

Four point scale	Definition
1	One species/taxon judged as rare or endangered at a local scale.
2	More than one species/taxon judged to be rare or endangered on a local scale.
3	One or more species/taxon judged to be rare or endangered on a Provincial/regional scale.
4	One or more species/taxon judged as rare or endangered on a National scale (i.e. SA Red Data Books)

Table 6. Results of the EIS assessment for the aquatic features

Biotic Determinants	Watercourse 1	Watercourse 2	Watercourse 3	Valley bottom wetland
Rare and endangered biota	0	0	0.5	1.0
Unique biota	0	0.5	0.5	1.0
Intolerant biota	0.5	1.0	0.5	1.0
Species/taxon richness	0.5	1.0	1.5	1.5
Aquatic Habitat Determinants				
Diversity of aquatic habitat types or features	0.5	1.0	1.5	1.5
Refuge value of habitat type	1.0	1.5	1.5	1.5
Sensitivity of habitat to flow changes	1.0	1.0	1.5	2.0
Sensitivity of flow related water quality changes	1.5	1.5	2.0	2.0
Migration route/corridor for instream and riparian biota	0.5	0.5	1.5	0.5
National parks, wilderness areas, Nature Reserves, Natural Heritage sites, Natural areas, PNEs	0	0	0	0
EIS CATEGORY	Low	Low	Moderate	Moderate

Table 7. Ecological importance and sensitivity categories (DWAF, 1999)

EISC	General description	Range of median
Very high	Quaternaries/delineations considered to be unique on a national and international level based on unique biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) are usually very sensitive to flow modifications and have no or only a small capacity for use.	>3-4
High	Quaternaries/delineations considered to be unique on a national scale based on their biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) may be sensitive to flow modifications but in some cases may have substantial capacity for use.	>2-≤3
Moderate	Quaternaries/delineations considered to be unique on a provincial or local scale due to biodiversity (habitat diversity, species diversity, unique species, rare and endangered species). These rivers (in terms of biota and habitat) are not usually very sensitive to flow modifications and often have substantial capacity for use.	>1-≤2
Low/marginal	Quaternaries/delineations not unique on any scale. These rivers (in terms of biota and habitat) are generally not very sensitive to flow modifications and usually have substantial capacity for use.	≤1

The smaller watercourses within the site are considered to be of a low ecological importance and sensitivity while the larger tributary and valley bottom wetland are of a moderate ecological importance and sensitivity due to the habitat that provides as well as the link that it helps to provide between the coast area and the hillslope.

8. LEGISLATIVE AND CONSERVATION PLANNING REQUIREMENTS

The proposed development needs to take cognizance of the legislative requirements, policies, strategies, guidelines and principals of the relevant regulatory documents of the George Municipal area, as well as the National Water Act (NWA) and the National Environmental Management Act (NEMA).

8.1. GEORGE MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK AND CONSERVATION PLAN

The site is located outside of the urban edge within an area indicated as Airport Support Zone. Only the larger watercourse to the south of the site is recognised in the plan in terms of its ecological importance in the landscape and is mapped as a Natural Scenic Linkage. These areas are seen as the natural catchment areas for storm water and serve the purpose of drainage of storm water run-off. The open space system has been delineated to create a continuous network across the area, effectively providing links between the various use zones. The continuation of the open space across the R102 serves to give visual depth and capitalizes on the scenic value of this resource. It is recommended that no development should be permitted within these areas and they must be dealt with in terms of environmental and zoning legislation in the layout and design of sites for other uses.

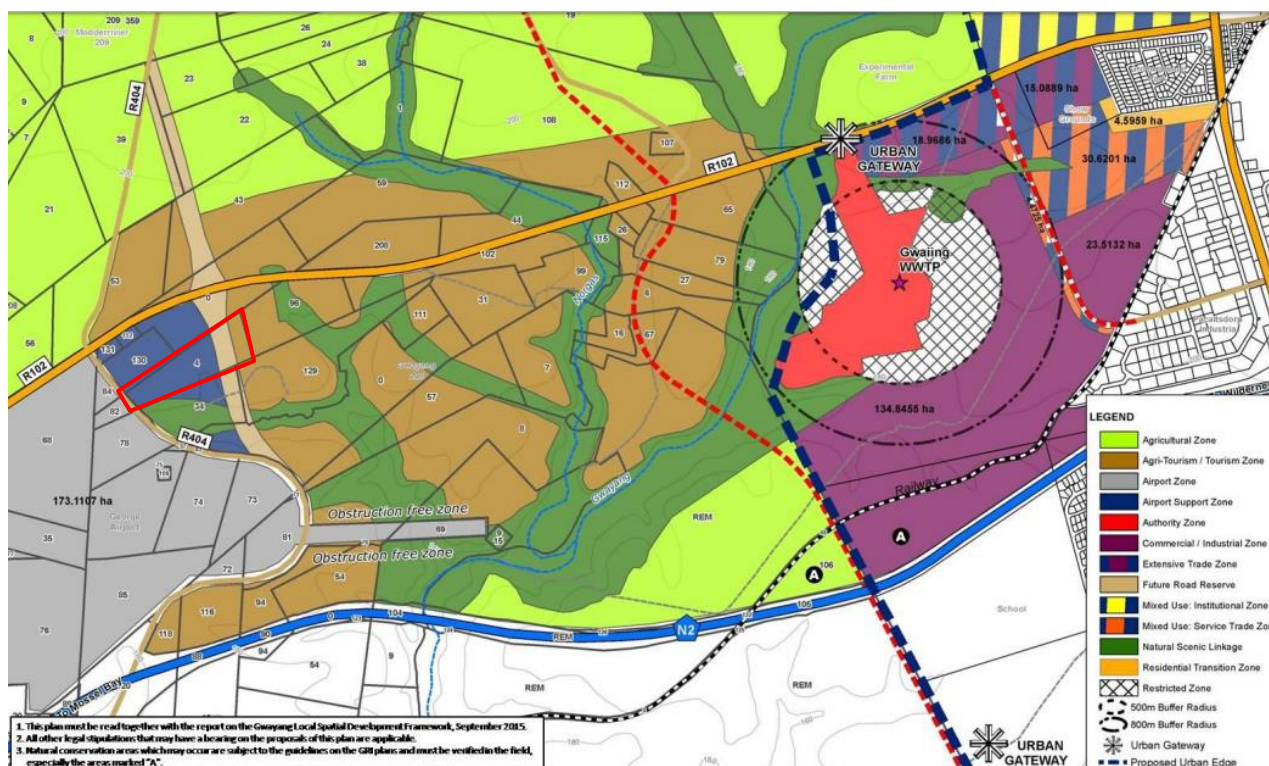


Figure 19. Gwyang Local Spatial Development Framework

8.2. NEMA AND ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS

Chapter Seven of the NEMA states that:

“Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment”.

The Act also clearly states that the landowner, or the person using or controlling the land, is responsible for taking measures to control and rectify any degradation. These may include measures to:

- “(a) investigate, assess and evaluate the impact on the environment;
- (b) inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment:
- (c) cease, modify or control any act, activity or process causing the pollution or degradation:
- (d) contain or prevent the movement of pollutants or degradation: or
- (e) eliminate any source of pollution or degradation: or
- (f) remedy the effects of the pollution or degradation.”

NEMA BASIC ASSESSMENT REGULATIONS, GN R982 OF 2014

In terms of Section 24 of NEMA, an application for Environmental Authorisation must be submitted to the competent authority for activities listed in the Environmental Impact Assessment (EIA) Regulations GN R326 of 2014, as amended in 2017, promulgated in terms of Section 24(5) of NEMA, and authorisation obtained prior to the commencement of those activities. Listing Notices 1-31 in terms of NEMA list activities that require EA (“NEMA listed activities”). Activities listed in Listing Notice 1 and Listing Notice 3 require a Basic Assessment (BA) process, while activities listed in Listing Notice 2 require Scoping and Environmental Impact Assessment. The proposed development includes activities listed in Listing Notice 1 and thus a Basic Assessment (BA) process will be followed for the project.

8.3. NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998)

The purpose of the National Water Act, 1998 (NWA) is to provide a framework for the equitable allocation and sustainable management of water resources. Both surface and groundwater sources are redefined by the Act as national resources which cannot be owned by any individual, and rights to which are not automatically coupled to land rights, but for which prospective users must apply for authorisation and register as users. The NWA also provides for measures to prevent, control and remedy the pollution of surface and groundwater sources.

The Act aims to regulate the use of water and activities (as defined in Part 4, Section 21 of the NWA), which may impact on water resources through the categorisation of 'listed water uses' encompassing water abstraction and flow attenuation within catchments as well as the potential contamination of water resources, where the DWS is the administering body in this regard. Specific water uses that are likely to be associated with the proposed activities are:

Section 21(c) – Impeding or diverting flow in a watercourse; and

Section 21(i) – Changing the bed, banks and characteristics of a watercourse.

Defined water use activities require the approval of DWS in the form of a General Authorisation or Water Use Licence authorisation. There are restrictions on the extent and scale of listed activities for which General Authorisations apply.

Section 22(3) of the National Water Act allows for a responsible authority (DWS) to dispense with the requirement for a Water Use Licence if it is satisfied that the purpose of the Act will be met by the grant of a licence, permit or authorisation under any other law.

GENERAL AUTHORISATION IN TERMS OF SECTION. 39 OF THE NWA

According to the preamble to Part 6 of the NWA, *"This Part established a procedure to enable a responsible authority, after public consultation, to permit the use of water by publishing general authorisations in the Gazette..."* *"The use of water under a general authorisation does not require a licence until the general authorisation is revoked, in which case licensing will be necessary..."*

The General Authorisations for Section 21 (c) and (i) water uses (impeding or diverting flow or changing the bed, banks or characteristics of a watercourse) as defined under the NWA have recently been revised (Government Notice R509 of 2016). The proposed works within or adjacent to the streams have the potential to change the characteristics of the associated freshwater ecosystems and may therefore require authorization. Determining if a water use licence is required for these water uses is now associated with the risk of degrading the ecological status of a watercourse. A low risk of impact could be authorised in terms of a General Authorisations (GA). A risk assessment for the activity is included in this report.

REGULATIONS REQUIRING THAT A WATER USER BE REGISTERED, GN R.1352 (1999)

Regulations requiring the registration of water users were promulgated by the Minister of DWA in terms of provision made in section 26(1)(c), read together with section 69 of the National Water Act, 1998. Section 26(1)(c) of the Act allows for registration of all water uses including existing lawful water use in terms of section 34(2). Section 29(1)(b)(vi) also states that in the case of a general authorisation, the responsible authority may attach a condition requiring the registration of such water use. The Regulations (Art. 3) oblige any water user as defined under section 21 of the Act to register such use with the responsible authority and effectively to apply for a Registration Certificate as contemplated under Art.7(1) of the Regulations.

9. ASSESSMENT OF IMPACTS

9.1. CONSTRAINTS OF THE PROPOSED DEVELOPMENT

From a freshwater perspective the freshwater constraints on the proposed development of Portion 4 of Farm 208 are the two watercourses and the associated valley bottom wetland. These aquatic features are mapped in Figure 20 together with the recommended watercourse corridors and then overlaid with proposed development plan for the site.

Due to the fact that the watercourses within the site are highly modified and of a relatively low ecological importance and sensitivity they do not pose a significant constraint to the proposed development of the site. They do however act as conduits for the movement of water through the landscape with the larger watercourse to the east occurring within a relatively wide and deep valley. This functionality of the watercourses is recognised within the biodiversity conservation mapping of the area where the watercourses are mapped as ecological support areas. These corridors and the associated functionality should thus preferably be maintained within the development proposal as far as possible.

Also of significance are the more ecologically important tributary of the Gwaing River and the valley bottom wetland area that are downstream of the site. Any potential impacts of the proposed development should be mitigated on site to prevent any further degradation of these aquatic ecosystems it is recommended that the two existing dams within the site located on the downstream edge of the two watercourses before they leave the property should be utilised to mitigate any stormwater impacts from the developed site.

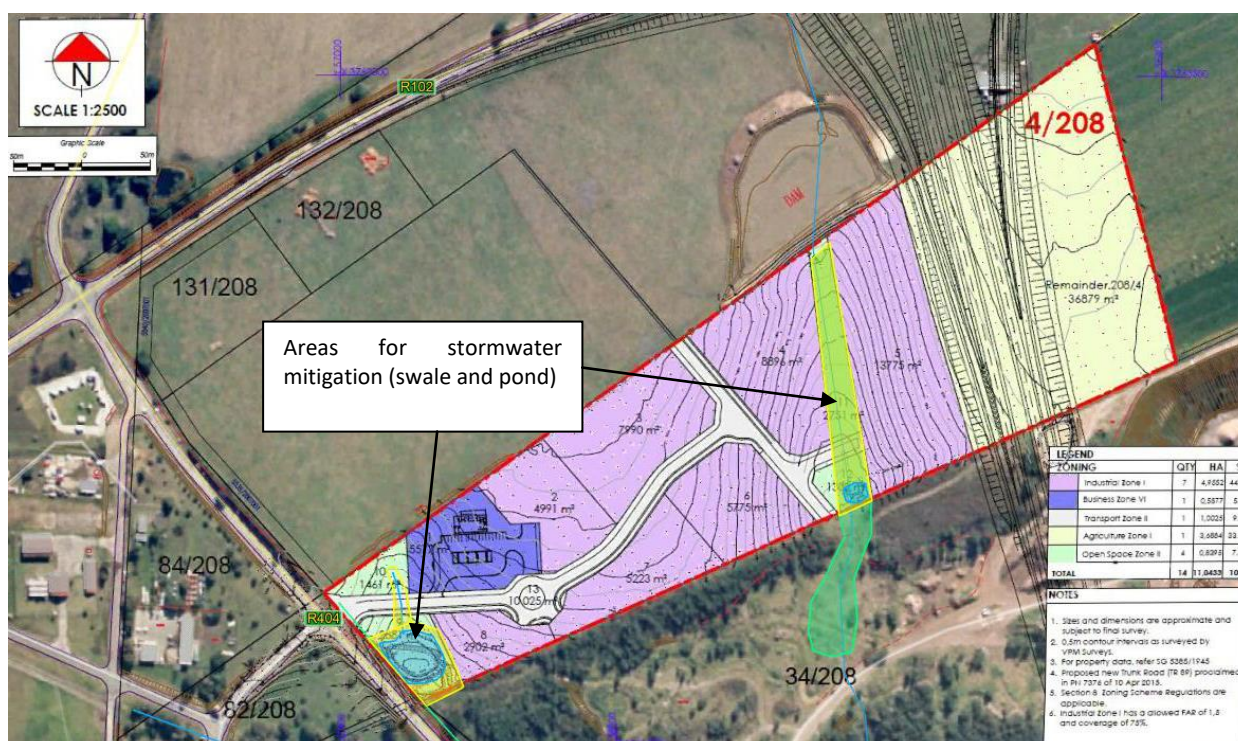


Figure 20. Constraints mapping for the proposed layout of the site, overlaid in Google Earth, where the yellow areas indicate the recommended development setback areas that should be set aside for accommodation and treatment of stormwater runoff from the site

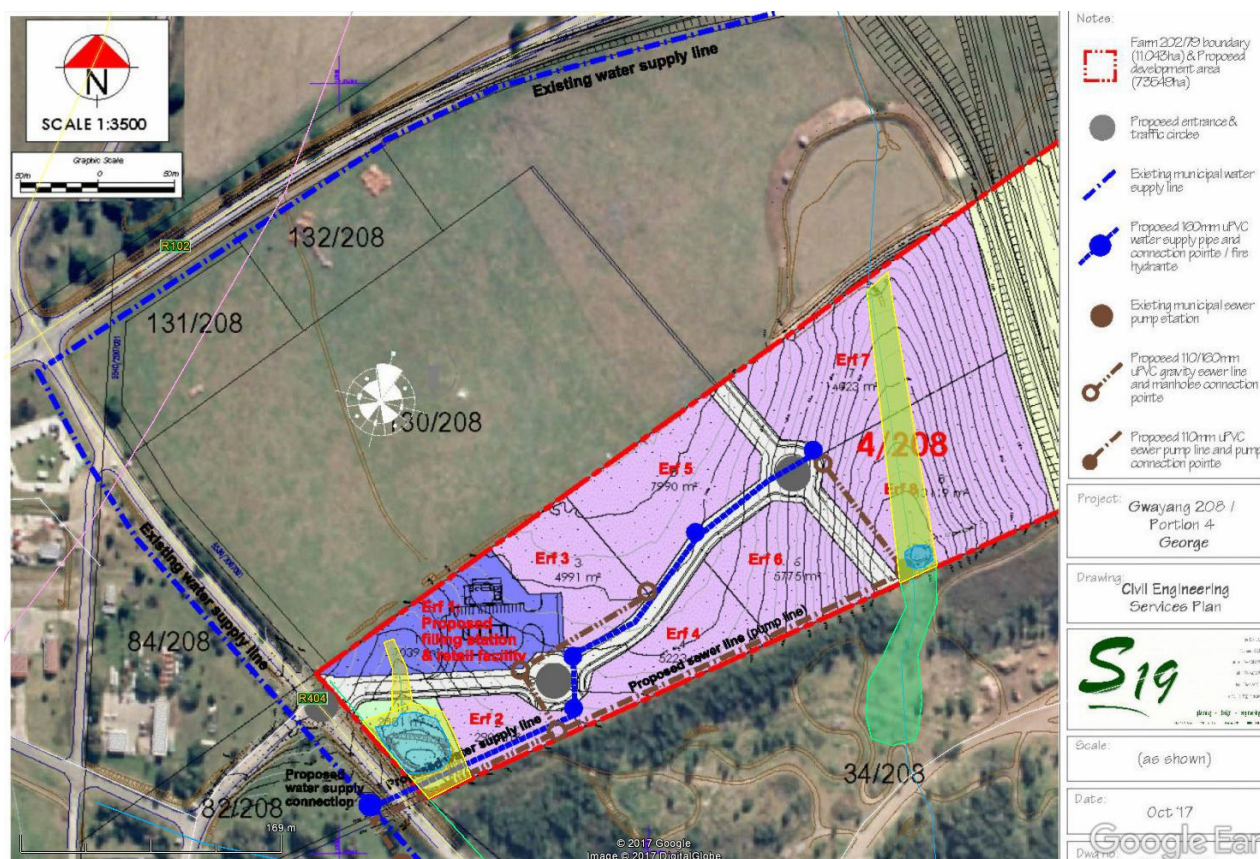


Figure 21. Proposed services for the site, overlaid in Google Earth with the proposed setback areas (yellow areas) indicated

Figure 21 shows the proposed services (water and sewer) for the site. From a freshwater perspective, of most concern is the pump station located at the downstream end of the larger watercourse and immediately upstream of the wetland area within that watercourse. It is recommended that the pump station be located further away from this corridor, preferably to the west of the internal road, that the road could provide a buffer and management area in which any possible spills from the pump station could be prevented from discharging into the wetland area. Maintenance and management perspective, and to reduce the disturbance in the open space associated with the smaller watercourse, it is also recommended that the infrastructure be contained as far as possible along the internal roads.

9.2. DESCRIPTION OF POTENTIAL IMPACTS ON THE FRESHWATER ECOSYSTEMS

NATURE OF IMPACT: LOSS OF WETLAND HABITAT AND ASSOCIATED BIOTA

The proposed development of the site could result in the potential modification and/or loss of aquatic habitat in and downstream the site. The specific surface water features to be avoided as well as the recommended watercourse corridors or development setback lines are indicated in Figure 20. Any potential impacts on the aquatic habitat of the more ecologically important tributary of the Gwaing River and the valley bottom wetland area that are downstream of the site should also be mitigated.

The watercourses within the site and their instream dams near the southern boundary of the site are not deemed to be highly significant aquatic habitats and could be integrated into the stormwater management system established onsite.

Significance of impacts without mitigation: MediumProposed mitigation:

Construction: The construction activities associated with the development of the site should be undertaken outside of the area indicated in Figure 20 as no-go areas (indicated watercourse corridors) except where those activities relate to the associated infrastructure within the aquatic corridors such as the stormwater infrastructure and the road into the site. The construction contractors should be adequately informed of the boundaries of the area and the no-go areas. The number of crossings of the watercourses for infrastructure (roads, water and sewer pipelines) should be minimised and as far as possible limited to one position (i.e. at the road crossing or dam/pond wall).

A corridor of approximately 20m for the larger watercourse and 10m for the smaller watercourse is recommended to accommodate stormwater flow within the site. These areas would need to be sized to accommodate the potential flow through the site. The watercourses and their instream dams near the southern boundary of the site can be incorporated into the stormwater management system for the site. The watercourses could possibly be shaped as open swales that are planted with wetland vegetation such as *Juncus effusus*, *Carex gloerabilis*, *C. clavata*, *Isolepis prolifera*, *Pycreus polystachyos* and *Zantedeschia aethiopica* within the wetter bed together with buffalo grass *Stenotaphrum secundatum* along the banks. The incorporation should as far as possible lead to the longer term improvement of the aquatic habitat within the watercourses on site and more importantly adequately mitigate any potential downstream impacts on the valley bottom wetland and watercourse south of the site. The dams in particular should assist with mitigation of the increased intensity of the runoff from the site that the final flow from the site is allowed to overflow from the ponds into the downstream watercourse and wetland area in a dispersed manner.

Operation: The recommended corridors that contain the stormwater flow through the site should consist largely of suitable local indigenous plants as mentioned above. The introduction of exotic and alien invasive plants (an in particular kikuyu grass *Pennisetum clandestinum*) for landscaped areas should be avoided. It is recommended that alien vegetation control measures take place throughout the undeveloped open areas of the site such as within the corridors and stormwater management areas. Control of nuisance growth of bulrush *Typha capensis* is likely to also be required on an ongoing basis to encourage growth of indigenous vegetation.

Significance of impacts after mitigation: Low

Nature	Modification and/or loss of aquatic habitat and associated biota	Status	-
Impact source(s)	Construction and operation activities adjacent to the aquatic features		
Impacted aquatic ecosystem	Watercourses and valley bottom wetland areas within the site as well as the watercourse and wetland area directly downstream (south) of the site		
Magnitude	Extent	Local	
	Intensity	Medium to high	
	Duration	Long term	
	Reversibility	Irreversible	
	Probability	Probable	
Significance	Without mitigation	Medium	M
	With mitigation	Medium to Low	ML
Confidence	High		

NATURE OF IMPACT: IMPAIRMENT OF THE SURFACE WATER QUALITY

The surface water within the aquatic features in or adjacent to the site could be contaminated by activities during construction as well as contaminated stormwater runoff from the developed areas during the operation phase. The potential for contamination of groundwater and groundwater dependant aquatic ecosystems (in particular the valley bottom wetland area) are being assessed by the geohydrologist for the project.

Significance of impacts without mitigation: Medium

Proposed mitigation: During construction, the necessary good housekeeping measures should be put in place and addressed through an Environmental Management Plan to minimise the potential for contamination of surface water runoff during the construction phase. The recommended corridors and associated stormwater management measures mentioned in the previous impact discussion are intended to minimise the potential for water quality impacts on the downstream aquatic features both during the construction and operation phases of the project.

It is recommended that the pump station be located further away from the larger watercourse corridor, preferably to the west of the internal road, that the road could provide a buffer and management area in which any possible spills from the pump station could be prevented from discharging into the downstream wetland area. Additional mitigation may be required at this pump station to ensure that any spills that may occur are adequately maintained on site and do not spill into the wetland area.

The stormwater management plan for the developed site should ensure that the surface and subsurface flow from the developed areas are contained onsite and mitigated within an onsite treatment system. As mentioned above the watercourses within the site and their instream dams near the southern boundary of the site can be incorporated into the stormwater management system for the site. On site oil and litter traps should be included in the treatment measures for the stormwater runoff.

The potential for groundwater contamination has been addressed through the design of the filling station in compliance with SABS SANS 10089-3 (2010) as well as the use of a watertight underground compartment into which the tanks will be placed. It is also essential that pollution prevention measures should be put in place within the site to ensure that there is no risk of pollution spills or contaminated runoff entering the aquatic habitats.

Significance of impacts after mitigation: Low

Nature	Impairment of water quality	Status	-
Impact source(s)	Contaminated run-off from the filling station and other developed areas both during the construction and operation phases		
Impacted aquatic ecosystem	Watercourses and valley bottom wetland areas within the site as well as the watercourse and wetland area directly downstream (south) of the site		
Magnitude	Extent	Local	
	Intensity	Medium	
	Duration	Long term	
	Reversibility	Partially Reversible	
	Probability	Possible	
Significance	Without mitigation	Medium	M
	With mitigation	Low	L
Confidence	Medium		

NATURE OF IMPACT: MODIFICATION OF THE FLOW

The hardening of the surface areas within the proposed development area would increase surface water runoff to the adjacent aquatic features.

Significance of impacts without mitigation: Low

Proposed mitigation: The stormwater management plan for the site in particular should ensure that post-development runoff from the site is adequately mitigated to minimise the impact on downstream aquatic habitats. As mentioned previously, a stormwater management plan should be developed that ensures the surface and subsurface flow from the developed areas is mitigated onsite, possibly incorporating the watercourses and their instream dams within the site. Where possible, permeable surfaces should be utilised to encourage infiltration or to reduce the velocity of surface water runoff. Water conservation measures such as the use of surface water runoff from the site for irrigation of landscaped areas should be encouraged.

The road crossing(s) over the watercourse(s) should ensure that there is sufficient drainage at the crossing to not impede or confine the flow (surface and sub-surface) within the watercourses. Any infrastructure that crosses the watercourses should also not impede flow in the watercourses.

Significance of impacts after mitigation: Very Low

Nature	Flow modification	Status	-
Impact source(s)	Alteration to stormwater runoff from developed site		
Impacted aquatic ecosystem	Watercourses and valley bottom wetland areas within the site as well as the watercourse and wetland area directly downstream (south) of the site		
Magnitude	Extent	Local	
	Intensity	Medium to Low	
	Duration	Long term	
	Reversibility	Reversible	
	Probability	Possible	
Significance	Without mitigation	Low	L
	With mitigation	Very Low	VL
Confidence	High		

9.3 CONSIDERATION OF ALTERNATIVES

The two alternatives proposed for the development of the site are described in Section 5.2 of this report. Both development alternatives include a filling station with parking bays and a service station shop as well as set aside the eastern extent of the site as Agriculture Zone 1 to allow for the proposed by-pass road. Both also set aside the existing dam in the south-western corner as open space. Alternative 1 also allows for 7 Industrial Zone I erven while Alternative 2 allows for a Business Zone II adjacent to the service station to accommodate business and a small retail store with parking. The No-Go Alternative implies the site remains undeveloped. A comparative impact table for the three alternatives considered is provided in Table 8.

Table 8. Comparative impact table for the development alternatives

Alternative		Alternative 1	Alternative 2	No-Go Alternative
Nature		Habitat, water quality and flow modification		
Impact source(s)		Development of site adjacent to aquatic features		No development but on-going disturbance
Impacted aquatic ecosystem		Watercourses and valley bottom wetland areas within the site as well as the watercourse and wetland area directly downstream (south) of the site		
Magnitude	<i>Extent</i>	Local	Local	Local
	<i>Intensity</i>	Medium to high	Medium	Low
	<i>Duration</i>	Long term	Long term	Long term
	<i>Reversibility</i>	Irreversible	Partially Reversible	Reversible
	<i>Probability</i>	Highly Probable	Probable	Possible
Significance	<i>Without mitigation</i>	Medium	Medium to low	Very low
	<i>With mitigation</i>	Medium to Low	Very low	Very low
Confidence		High		

Alternative 1 is likely to have the greater potential impact on the watercourses and valley bottom wetland area within the site as well as the watercourse and wetland area directly downstream (south) of the site due to the fact that it will entail development of most of the site. With mitigation however the potential impact of the development of the site would still be low. Alternative 2 will largely only impact on the smaller western tributary while the No-go Alternative will entail the status quo within the site being maintained, i.e. the watercourses within the site will remain in their existing degraded ecological condition and there would be no potential risk of further impacts to the downstream aquatic ecosystems.

9.4. CUMULATIVE IMPACTS

The tributaries and wetland areas of the Gwaing River System have all been significantly been modified by the urban activities where the rivers are located within the George urban edge and by agricultural activities outside of George. As a result the aquatic habitat, flow and water quality in the watercourses have been altered with most of the indigenous riparian vegetation having been removed and many of the riparian zones of the rivers have become invaded with alien vegetation. The rivers do however still provide an important ecological function in the landscape in providing corridors for the movement of water and associated biota between the higher lying areas and the coast within a transformed landscape. It is important that this functionality be maintained and that where possible opportunities be sought to remove alien vegetation that invades these corridors and to reintroduce indigenous vegetation.

The proposed development does not impact on any major watercourses within the Gwaing River System and, as such, has a low potential cumulative impact on the larger aquatic ecosystem. It will however entail development adjacent to two smaller watercourses of the river system and should accommodate these watercourses within the development of the site to reduce the potential of impact on the downstream larger tributary of the Gwaing River.

10. RISK ASSESSMENT

A risk assessment (Table 9) has been undertaken to inform the water use authorisation process and is included in this report in Appendix D. The risk matrix is a tool utilised to inform Section 21(c) and (i) water uses only.

In terms of the proposed layout, the risk of altering the ecological status of the aquatic features within the site as a result of the proposed development of the site is considered to be low for the construction phase and operational phase. The need for sewerage pipelines to cross the two watercourses within the site, as well as the proposed pump station near the larger watercourse and wetland area will however imply that the proposed works will be excluded from the General Authorisations and that a water use licence will need to be applied for.

Table 9. A summary of the risk assessment for the proposed Alternative 1

Phases	Activity	Aspect	Impact	Significance	Risk Rating*
Construction	Clearing and preparation of site, construction of infrastructure and development in and adjacent to aquatic features	Soil movement and construction of infrastructure in and adjacent to aquatic features on site	Disturbance and loss of aquatic habitat	54	L
Operation	Storm water run-off generated on site, operation and maintenance of site and open areas	Stormwater runoff, maintenance of stormwater and other infrastructure as well as open areas	Modified flow and water quality of stormwater	52.5	L

* Low risk = 1-55 significance score

11. CONCLUSIONS AND RECOMMENDATIONS

The study area is located in the K30B quaternary catchment, within the catchment of the Gwaing River. The tributary of the Gwaing River at the site flows through the George Airport before flowing south of the site and into the Gwaing River. The stream is joined by two smaller tributaries that cross the site. A small valley-bottom wetland is associated with the larger watercourse.

The watercourses in the area are mapped Ecological Support Areas and the lower sections of the larger tributary of the Gwaing River (that is south of the site) is mapped as aquatic CBAs where the two stream confluence and the valley bottom wetland areas occur. The wider river corridor is mapped as riparian forest CBAs. The valley bottom wetland area associated with the Gwaing River is also mapped as a FEPA wetland. No FEPA wetland features are mapped within the site.

Both the watercourses and the valley bottom wetland area within the site are considered to be in a seriously modified ecological condition with extensive loss of ecological functionality as a result of cultivation of the area as well as the instream dams. The larger tributary of the Gwaing River to the south of the site is in a better ecological condition and is moderately to largely modified as a result of the construction of the airport and the associated activities and the invasion of the riparian zone with alien invasive plants.

The smaller watercourses within the site are considered to be of a low ecological importance and sensitivity while the larger tributary and valley bottom wetland are of a moderate ecological importance and sensitivity due to the habitat that provides as well as the link that it helps to provide between the coast area and the hillslope.

Due to the fact that the watercourses within the site are highly modified and of a relatively low ecological importance and sensitivity they do not pose a significant constraint to the proposed development of the

site. They do however act as conduits for the movement of water through the landscape with the larger watercourse to the east occurring within a relatively wide and deep valley. This functionality of the watercourses is recognised within the biodiversity conservation mapping of the area where the watercourses are mapped as ecological support areas. These corridors and the associated functionality should thus preferably be maintained within the development proposal as far as possible.

A corridor of approximately 20m for the larger watercourse and 10m for the smaller watercourse is recommended to accommodate stormwater flow within the site. These areas would need to be sized to accommodate the potential flow through the site. The watercourses and their instream dams near the southern boundary of the site can be incorporated into the stormwater management system for the site. The watercourses could possibly be shaped as open swales that are planted with wetland vegetation such as *Juncus effusus*, *Carex gloerabilis*, *C. clavata*, *Isolepis prolifera*, *Pycnus polystachyos*, and *Zantedeschia aethiopica* within the wetter bed together with buffalo grass *Stenotaphrum secundatum* along the banks. The incorporation should as far as possible lead to the longer term improvement of the aquatic habitat within the watercourses on site and more importantly adequately mitigate any potential downstream impacts on the valley bottom wetland and watercourse south of the site. The dams in particular should assist with mitigation of the increased intensity of the runoff from the site that the final flow from the site is allowed to overflow from the ponds into the downstream watercourse and wetland area in a dispersed manner.

The number of crossings of the watercourses for infrastructure (roads, water and sewer pipelines) should be minimised and as far as possible limited to one position (i.e. at the road crossing or dam/pond wall). It is also recommended that the pump station be located further away from the larger watercourse corridor, preferably to the west of the internal road, that the road could provide a buffer and management area in which any possible spills from the pump station could be prevented from discharging into the downstream wetland area. Additional mitigation may be required at this pump station to ensure that any spills that may occur are adequately maintained on site and do not spill into the downstream wetland area.

The introduction of exotic and alien invasive plants (an in particular kikuyu grass *Pennisetum clandestinum*) for landscaped areas should be avoided. It is recommended that alien vegetation control measures take place throughout the undeveloped open areas of the site such as within the corridors and stormwater management areas. Control of nuisance growth of bulrush *Typha capensis* is likely to also be required on an ongoing basis to encourage growth of indigenous vegetation.

Also of significance are the more ecologically important tributary of the Gwaing River and the valley bottom wetland area that are downstream of the site. Any potential impacts of the proposed development should be mitigated on site to prevent any further degradation of these aquatic ecosystems it is recommended that the two existing dams within the site located on the downstream edge of the two watercourses before they leave the property should be utilised to mitigate any stormwater impacts from the developed site. The incorporation should as far as possible lead to the longer term improvement of the aquatic habitat within the watercourses on site and more importantly adequately mitigate any potential downstream impacts on the valley bottom wetland and watercourse south of the site.

Alternative 1 is likely to have the greater potential impact on the watercourses and valley bottom wetland area within the site as well as the watercourse and wetland area directly downstream (south) of the site due to the fact that it will entail development of most of the site. With mitigation however the potential impact of the development of the site would still be low. Alternative 2 will largely only impact

on the smaller western tributary while the No-go Alternative will entail the status quo within the site being maintained, i.e. the watercourses within the site will remain in their existing degraded ecological condition and there would be no potential risk of further impacts to the downstream aquatic ecosystems.

In terms of the proposed layout, the risk of altering the ecological status of the aquatic features within the site as a result of the proposed development of the site is considered to be low for the construction phase and operational phase. The need for sewerage pipelines to cross the two watercourses within the site, as well as the proposed pump station near the larger watercourse and wetland area will however imply that the proposed works will be excluded from the General Authorisations and that a water use licence will need to be applied for, for Section 21c and i water uses.

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APPENDIX A: DECLARATION OF INDEPENDENCE

I, Antonia Belcher, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favorable 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.

Signature of the specialist: 

Date: 7 November 2017

APPENDIX B: BACKGROUND AND QUALIFICATIONS OF SPECIALIST CONSULTANT

Contact details: PO Box 455, Somerset Mall, 7137

Name: Antonia Belcher

Profession: Aquatic Scientist (Pr. Nat. Sc. 400040/10)

Fields of Expertise: Specialist in river and wetland monitoring and reporting

Relevant work experience:

Due to my involvement in the development and implementation of the River Health Programme as well as the Resource Directed Measures directorate of the Department of Water Affairs in the Western Cape, I have been a key part of the team that has undertaken six catchment or area wide 'state-of-river' assessments as well as routine monitoring and specialized assessments of rivers and wetlands in all the major catchments for the Western Cape. In the past eight years, I have undertaken numerous freshwater assessments as input into both the environmental authorization and water use authorization process throughout the Western Cape as well as greater Southern Africa.

Papers and Publications:

More than 300 publications, papers and posters relating mostly to water resource quality and river health assessments in South African rivers and their management.

Recent projects that she has been involved in are:

- Classification of Water Resources in the Olifants-Doorn Water Management Areas, Department of Water Affairs;
- Development and piloting of a National Strategy to Improve Gender Representation in Water Management Institutions, where the focus is on improving the capacity to participate in water related decision making, Department of Water Affairs and Forestry;
- Compilation of a background document as well as a framework management plan towards the development of an integrated water resources management plan for the Sandveld;
- Specialist on the City of Cape Town project: Determination of additional resources to manage pollution in storm water and river systems;
- River Health Programme monitoring for the Free State Region, Department of Water Affairs; and
- Framework for Education and Training in Water (FETWATER), Resource Directed Measures Network partner which has undertaken training initiatives on environmental water requirements in the SADC region.

APPENDIX C: IMPACT ASSESSMENT METHODOLOGY

Criteria and ratings:

1. Extent

“Extent” defines the physical extent or spatial scale of the impact.

Rating	Description
LOCAL	Extending only as far as the activity, limited to the site and its immediate surroundings. Specialist studies to specify extent.
REGIONAL	Western Cape. Specialist studies to specify extent.
NATIONAL	South Africa
INTERNATIONAL	

2. Duration

“Duration” gives an indication of how long the impact would occur.

Rating	Description
SHORT TERM	0 - 5 years
MEDIUM TERM	5 - 15 years
LONG TERM	Where the impact will cease after the operational life of the activity, either because of natural processes or by human intervention.
PERMANENT	Where mitigation either by natural processes or by human intervention will not occur in such a way or in such time span that the impact can be considered transient.

3. Intensity

“Intensity” establishes whether the impact would be destructive or benign.

Rating	Description
ZERO TO VERY LOW	Where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.
LOW	Where the impact affects the environment in such a way that natural, cultural and social functions and processes continue, albeit in a slightly modified way.
MEDIUM	Where the affected environment is altered, but natural, cultural and social functions and processes continue, albeit in a modified way.
HIGH	Where natural, cultural and social functions or processes are altered to the extent that it will temporarily or permanently cease.

4. Loss of resources

“Loss of resource” refers to the degree to which a resource is permanently affected by the activity, i.e. the degree to which a resource is irreplaceable.

Rating	Description
LOW	Where the activity results in a loss of a particular resource but where the natural, cultural and social functions and processes are not affected.
MEDIUM	Where the loss of a resource occurs, but natural, cultural and social functions and processes continue, albeit in a modified way.
HIGH	Where the activity results in an irreplaceable loss of a resource.

5. Status of impact

The status of an impact is used to describe whether the impact would have a negative, positive or zero effect on the affected environment. An impact may therefore be negative, positive (or referred to as a benefit) or neutral.

6. Probability

“Probability” describes the likelihood of the impact occurring.

Rating	Description
IMPROBABLE	Where the possibility of the impact to materialise is very low either because of design or historic experience.
PROBABLE	Where there is a distinct possibility that the impact will occur.
HIGHLY PROBABLE	Where it is most likely that the impact will occur.
DEFINITE	Where the impact will occur regardless of any prevention measures.

7. Degree of confidence

Confidence in the impact predictions, based on the availability of information and specialist knowledge.

Rating	Description
HIGH	Greater than 70% sure of impact prediction.
MEDIUM	Between 35% and 70% sure of impact prediction.
LOW	Less than 35% sure of impact prediction.

8. Significance

“Significance” attempts to evaluate the importance of a particular impact, and in doing so incorporates the above three scales (i.e. extent, duration and intensity).

Rating	Description
VERY HIGH	Impacts could be EITHER: of high intensity at a regional level and endure in the long term; OR of high intensity at a national level in the medium term; OR of medium intensity at a national level in the long term.
HIGH	Impacts could be EITHER: of high intensity at a regional level and endure in the medium term; OR of high intensity at a national level in the short term; OR of medium intensity at a national level in the medium term; OR of low intensity at a national level in the long term; OR of high intensity at a local level in the long term; OR of medium intensity at a regional level in the long term.
MEDIUM	Impacts could be EITHER: of high intensity at a local level and endure in the medium term; OR of medium intensity at a regional level in the medium term; OR of high intensity at a regional level in the short term; OR of medium intensity at a national level in the short term; OR of medium intensity at a local level in the long term; OR of low intensity at a national level in the medium term; OR of low intensity at a regional level in the long term.
LOW	Impacts could be EITHER of low intensity at a regional level and endure in the medium term; OR of low intensity at a national level in the short term; OR of high intensity at a local level and endure in the short term; OR of medium intensity at a regional level in the short term; OR of low intensity at a local level in the long term; OR of medium intensity at a local level and endure in the medium term.
VERY LOW	Impacts could be EITHER of low intensity at a local level and endure in the medium term; OR of low intensity at a regional level and endure in the short term; OR of low to medium intensity at a local level and endure in the short term.
INSIGNIFICANT	Impacts with: Zero to very low intensity with any combination of extent and duration.
UNKNOWN	In certain cases it may not be possible to determine the significance of an impact.

9. Degree to which impact can be mitigated

This indicates the degree to which an impact can be reduced / enhanced.

Rating	Description
NONE	No change in impact after mitigation.
VERY LOW	Where the significance rating stays the same, but where mitigation will reduce the intensity of the impact.
LOW	Where the significance rating drops by one level, after mitigation.
MEDIUM	Where the significance rating drops by two to three levels, after mitigation.
HIGH	Where the significance rating drops by more than three levels, after mitigation.

10 Reversibility of an impact

This refers to the degree to which an impact can be reversed.

Rating	Description
IRREVERSIBLE	Where the impact is permanent.
PARTIALLY REVERSIBLE	Where the impact can be partially reversed.
FULLY REVERSIBLE	Where the impact can be completely reversed.

APPENDIX D: RISK ASSESSMENT MATRIX FOR THE PROJECT

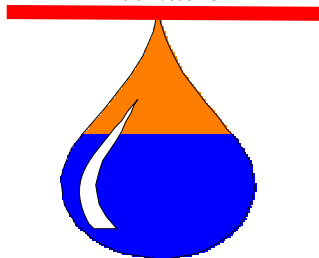
ASPECTS AND IMPACT REGISTER/RISK ASSESSMENT FOR WATERCOURSES INCLUDING RIVERS, PANS, WETLANDS, SPRINGS, DRAINAGE LINES: Gwayang Filling Station and associated development of Portion 4 of Farm 208, Gwayang near George

COMPILED BY: Toni Belcher (SACNASP no. 400040/10), BlueScience

DATE: November 2017

Alternative 1																						
Nr.	Phases	Activity	Aspect	Impact	Severity				Severity	Spatial scale	Duration	Consequence	Frequency of activity	Frequency of impact	Legal Issues	Detection	Likelihood	Significance	Risk Rating	Control Measures	Confidence	Type Watercourse; PES=B; EIS=Moderate
					Flow Regime	Physico & Chemical (Water Quality)	Habitat (Geomorph+Vegetation)	Biota														
1	Construction	Clearing and preparation of site, construction of infrastructure and development in and adjacent to aquatic features	Soil movement and construction of infrastructure in and adjacent to aquatic features on site	Disturbance and loss of aquatic habitat	1.5	2	1.5	1	1.5	1	2	4.5	1	4	5	2	12	54	L	See freshwater report	High	Gwaing River System - Minor watercourses (PES=E/F; EIS=low) and wetland (PES=C; EIS=moderate) within site
1	Operation	Storm water run-off generated on site, operation and maintenance of site and open areas	Stormwater runoff, maintenance of stormwater and other infrastructure as	Modified flow and water quality of stormwater	1	2	1	1	1.25	1	3	5.25	1	2	5	2	10	52.5	L		Medium/high	

Parsons & Associates
specialist groundwater consultants ^{cc}
CK 96/27895/23



Report

390/GAS-D1

Specialist Groundwater Study

Assessment of Potential Impacts from Proposed Filling Station on Portion 4 - Farm 208 Gwayang, George Airport

report prepared for

JS Projects^{cc}

Ref: 390/GAS

January 2018

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- 4 Location of two other sites approved for development as filling station in relation to the site currently under investigation.

LIST OF DEFINITIONS

Aquifer: a geological unit that contains sufficient saturated permeable material to store and transmit water; and to yield economical quantities of water to boreholes or springs.

Borehole: includes a well, excavation, or any other artificially constructed or improved groundwater cavity which can be used for the purpose of intercepting, collecting or storing water from an aquifer; observing or collecting data and information on water in an aquifer; or recharging an aquifer.

Electrical conductivity: is a measure of how well a material accommodates the transport of electric charge. The more salts dissolved in the water, the higher the EC value. It is used to estimate the amount of total dissolved salts, or the total amount of dissolved ions in the water.

Geohydrology: used interchangeably with hydrogeology.

Groundwater: water found in the subsurface in the saturated zone below the water table or piezometric surface i.e. the water table marks the upper surface of groundwater systems.

Hydraulic conductivity: measure of the ease with which water will pass through the earth's material and defined as the rate of flow through a cross-section of one square metre under a unit hydraulic gradient at right angles to the direction of flow.

Hydraulic gradient: the slope of the water table or piezometric surface; is a ratio of the change of hydraulic head divided by the distances between the two points of measurement.

Hydrogeology: study of the properties, circulation and distribution of groundwater.

Minor aquifer system: These can be fractured or potentially fractured rocks which do not have a high primary permeability, or other formations of variable permeability. Aquifer extent may be limited and water quality variable. Although these aquifers seldom produce large quantities of water, they are important both for local supplies and in supplying base flow for rivers.

Monitoring: comprises the collection, analysis and storage of data on a regular basis to provide information for effective groundwater management.

Permeability: the ease with which a fluid can pass through a porous medium and is defined as the volume of fluid discharged from a unit area of an aquifer under unit hydraulic gradient in unit time (expressed as $m^3/m^2/d$ or m/d); it is an intrinsic property of the porous medium and is dependent of the properties of the saturating fluid.

Poor aquifer: these are formations with negligible permeability that are generally regarded as not containing groundwater in exploitable quantities. Water quality may also be such that it renders the aquifer as unusable. However, groundwater flow through such rocks, although imperceptible, does take place, and needs to be considered when assessing the risk associated with persistent pollutants.

Porosity: ratio of the volume of void space to the total volume of the rock or earth material.

Secondary aquifer: An aquifer in which groundwater moves through secondary openings and interstices, which developed after the rocks were formed.

Transmissivity: the rate at which a volume of water is transmitted through a unit width of aquifer under a unit hydraulic head (m^2/d); product of the thickness and average hydraulic conductivity of an aquifer.

DECLARATION OF INDEPENDENCE, QUALIFICATION AND EXPERIENCE

Project: Gwayang filling station
Client: JS Projects^{cc}
Environmental Consultant: Cape EAPrac

DECLARATION OF INDEPENDENCE

I hereby declare that I have no financial or other interest in the undertaking of the proposed activity other than the imbursement of consultants fees.

QUALIFICATIONS AND EXPERIENCE

I have a Ph.D degree in Hydrogeology from the Institute for Groundwater Studies, University of the Free State and have practised as a Hydrogeologist since 1984. Prior to establishing Parsons & Associates Specialist Groundwater Consultants^{cc} in 1996, I worked for the Department of Water Affairs: Directorate of Geohydrology (1984 – 1990) and the CSIR: Groundwater Programme (1990 – 1996). I am a registered Professional Natural Scientist (Reg. No. 400163/88), and regularly attend conferences, lectures and training courses to remain abreast of developments in my field.



Dr Roger Parsons
Ph.D. (U.F.S.) Pr.Sci.Nat.

1 INTRODUCTION

Parsons & Associates Specialist Groundwater Consultants^{cc} was appointed by JS Projects^{cc} to undertake a groundwater assessment of the proposed Gwayang Filling Station on Portion 4 of Farm 208 Gwayang, George Airport (Figure 1). The groundwater assessment is to inform a Basic Assessment being undertaken by Cape EAPrac Environmental Management Practitioners as part of the application process for the establishment of the planned facility (Cape EAPrac, 2017).

It was proposed that a site visit be undertaken to confirm conditions prevailing near the site, and in particular confirm groundwater use in and around the proposed facility and determine whether impacts have resulted from the adjacent airport. This preliminary study was to be based on an information search of the National Groundwater Archive, existing reports and a hydrocensus. If the preliminary investigation suggested a more detailed study was required, then a second phase of study would be initiated that could entail the drilling of three boreholes.

2 SCOPE OF WORK

It was proposed that Parsons & Associates undertake the following activities as part of the preliminary groundwater investigation:

- Review hydrogeological conditions prevailing at and around the site based on NGA data and existing reports and maps of the area;
- Undertake a hydrocensus within at least 1 km of the proposed filling station;
- Assess the potential impact of the proposed activity on the groundwater regime and groundwater users using prescribed protocols;
- Document the results of the groundwater investigation in a short report, including recommendations regarding appropriate mitigation measures and further groundwater investigation – if required.

3 KEY ASSUMPTIONS

In undertaking this assessment, it was assumed that all relevant information was provided to Parsons & Associate on appointment. Further, it was assumed sufficient information would be gathered on which to base the groundwater impact assessment. However, if insufficient information were available to assess the potential risk of the proposed activity on the groundwater regime, then a second phase of study would be commissioned.

4 AVAILABLE HYDROGEOLOGICAL INFORMATION

A search of the National Groundwater Archive did not reveal any hydrogeological information in the near vicinity of the proposed development. A geophysical investigation of the George Airport by Abrahams (2012) provided some background information, as did the regional hydrogeological description by Parsons & Veltman (2006) and the hydrogeological mapping by Meyer (1999).

5 DESCRIPTION OF SITE

The proposed development is located directly opposite the entrance to the George Airport. The site is relatively flat to gently undulating in character and at an elevation of about 190 mamsl. The site is located between the Maalgate River in the west and the Gwaing River in the east. Located in quaternary catchment K30B, the site is located directly east of the catchment divide between quaternary catchment K30A. The site falls within the Gouritz Water Management Area.

Snaddon (2012) reported the existence of a valley bottom wetland some 150 m south of the position of the proposed filling station. Absence of depth to groundwater data precludes an assessment of the link between the wetland and groundwater, but it is considered unlikely that the wetland is groundwater driven. This interpretation is supported by the low electrical conductivity of water sampled by Snaddon (2012) from the wetlands (25 mS/m) compared to the expected groundwater quality of 300 mS/m and worse.

The climate along the coast is temperate; with moderately hot summers and mild to chilly winters. Rain falls throughout the year, with slightly higher rainfall being recorded during

spring and late summer. Precipitation is mostly generated from cold fronts approaching from the southwest and is orographically influenced. Average annual rainfall is in the order of 750mm/a while mean annual potential evaporation amounts to 1 400 mm/a.

The proposed development is located on weathered Maalgaten Granite of the George pluton (Coetzee, 1979) (Figure 2). These rocks intruded the sedimentary rocks of the Kaaimans Group about 600 Ma ago. Abrahams (2012) reported that a thin sand cover (~ 1 m) overlies orange-grey stiff clay, here interpreted to be highly weathered clay. The clay – as tested by means of four test pits on the opposite side of the R404 - was reported to have a very low permeability of 1.3×10^{-7} m/s to 1.3×10^{-8} m/s. This aspect will be addressed in the geotechnical survey of the current site of interest being undertaken by Outeniqua Geotechnical Services.

The granitic aquifer in the vicinity of George is regarded as a poor aquifer (as defined by DWAF, 2000), with borehole yields being low and groundwater quality being poor. The aquifer is secondary in character and owes its water-bearing properties to weathering processes. Data from the National Groundwater Archive indicates that the quality of groundwater from the granitic aquifer south of George is exceptionally poor. The electrical conductivity (EC) of five boreholes ranged between 306 mS/m and 1 350 mS/m, with an average 812 mS/m and a harmonic mean of 606 mS/m. These EC levels exceed the drinking standard of 170 mS/m (SANS, 2015). The groundwater has a Na Cl character.

In the absence of depth to groundwater measurements, it is assumed groundwater flows in a southerly direction to the sea. Some local variance may occur because of surface drainage patterns.

The property is currently vacant (i.e. without improvements) and is used as grazing for cattle (Figure 1). A small existing dam is located in the south-west corner of the property. The site is located in a rural setting with agriculture (livestock) being the predominant land use. The George Airport is located directly west and south of the property while the Terblanche Quarry is located to the east.

6 GROUNDWATER USE

A hydrocensus undertaken on 8 November 2017 did not identify any groundwater use in the vicinity of Portion 4 of Farm 208 Gwayang, George Airport. Neither the George Airport to the south or the Terblanche Quarry to the east make use of boreholes, respectively relying on municipal and dam water for their water supplies. Irrigated areas in the area obtain water from farm dams and the Gwaing River. Domestic water at the nearby Norgarivier Nursery is supplied by the municipality, while water for the nursery is sourced from the farm dam.

The source of water to small holdings some 700 m north of the proposed development could not be ascertained as none of the land owners were home at the time of the hydrocensus. The absence of this information is not considered a limitation as the properties are upgradient and distant from the area of interest.

7 PROPOSED DEVELOPMENT

It is proposed that Portion 4 of Farm 208 will be divided into 11 erven, with one erven to be developed as a filling station (Figure 3). Seven of the erven are to be developed for warehousing and airport support services, while the remaining erven will be developed as internal roads, open space and for agriculture.

The filling station is to comprise of four dispenser islands for light vehicles and one dispenser island for heavy vehicles (Cape EAPrac, 2017). The fuel will be stored in three 45 KL underground storage tanks. The filling station will be supported by a convenience store, a quick service restaurant and take away with limited seating, toilets and associate infrastructure connecting to municipal services.

It is noted that approval has been granted by the George Municipality for the development of two filling stations directly west and north of that currently being assessed (Vreken, 2017), but neither has been developed (Figure 4). The George Airport also stores aviation fuel and is thus also a potential source of groundwater contamination.

8 IMPACT ASSESSMENT

8.1 Sources of Risk

Leakage of fuel from underground storage tanks and the resultant contamination of groundwater is well documented in the scientific literature. Two main sources of potential contamination occur at filling stations:

- Spillage of fuel at surface; and
- Leakage from underground storage tanks and pipes.

These sources of contamination are only relevant during the operational phase of the project, and are not applicable during construction. Consequently, impacts to groundwater during the construction phase were not assessed.

Further, it is noteworthy that the impact of the proposed layout or positional alternatives will be similar. As a result, impacts to groundwater resulting from the different alternatives were not individually assessed.

8.2 Impact Assessment

Occurrence of spillages at surface can largely be controlled by careful operation and appropriate management of run-off from the platform. However, leakage is difficult to detect as the impacts are not visible and can only be detected by indirect means (drilling of boreholes, vapour surveys, geophysics, tank pressure testing, etc.). Modern design and construction aims to remove this risk, while routine monitoring provides a check as to the effectiveness of this approach. Barber et al. (1990) estimated as many as 20% of subsurface storage systems in Perth, Australia had failed, but more recent reviews of groundwater contaminated in this way are not available. However, it is assumed modern standards such as those of SANS 10089-3 have reduced the probability of leakage occurring.

Fuel spilt at surface and leaked from underground tanks and associate pipes would migrate downwards through the vadose zone and into the aquifer. This would impair the aquifer and potentially impact groundwater users – be it man or the environment.

Petroleum hydrocarbon compounds are the contaminants of concern. In addition to being light non-aqueous phase liquids (LNAPL's) which float on the surface of water, these contaminants are readily mobile in the subsurface and persistent. As a result, remediation and clean-up of significant leaks is both technically difficult and expensive.

Owing to the impermeable nature of the subsurface – and particularly the near-surface clays – movement of any spilt or leaked fuel would be limited and restricted to the site (Tables 1 and 2). The consequence of contamination – if it were to occur – is therefore interpreted to be limited as:

- The aquifer in the vicinity of the proposed development is not used; and is unlikely to be used to any significant extent owing to its poor hydrogeological potential; and
- The closest surface water body (Gwaing River) which could potentially be connected to the groundwater system is located 1.7 km distant from the proposed filling station; and the hydraulic properties of the aquifer are such that it is improbable that any contamination at the filling station would migrate to the Gwaing River.

Consequently, it is interpreted that the proposed filling station poses very little or no threat to the groundwater regime if design, construction and management standards are implemented. This is true of all layout or positional alternatives. Similarly, the cumulative effect if all three filling stations were developed would be insignificant.

9 PROPOSED MITIGATORY REQUIREMENTS

It is assumed that the filling station will be designed, constructed and managed according to industry norms and the requirements set out in SANS 10089-3. Of relevance is the recommendation regarding the regular testing of the underground tanks.

Given the interpreted risk and consequence of groundwater contamination, it is not recommended that any monitoring boreholes be sunk. Rather monitoring of fuel volumes and routine tank pressure testing will suffice.

Table 1: Assessment of the impact of spills contaminating the underlying groundwater system during the operational phase.

Alternative	Nature of impact	Extent of impact	Duration of impact	Intensity	Probability of occurrence	Status of the impact	Degree of confidence	Level of significance	Significance after mitigation
No-Go (status quo)	Spills contaminating groundwater and impacting users	na	na	na	na	na	Very high	None	na
Development		Site	Long term	Medium	Probable	Negative	Very high	Low	Insignificant

Table 2: Assessment of the impact of contaminating the underlying groundwater system as a result of leakage during the operational phase.

Alternative	Nature of impact	Extent of impact	Duration of impact	Intensity	Probability of occurrence	Status of the impact	Degree of confidence	Level of significance	Significance after mitigation
No-Go (status quo)	Leaks contaminating groundwater and impacting users	na	na	na	na	na	Very high	None	na
Development		Site	Long term	High	Probable	Negative	Very high	Low	Insignificant

10 SUMMARY

Portion 4 of Farm 208 Gwayang is located on a weathered and fractured granitic aquifer that yields poor groundwater quality and is not used within 1 km of the facility. The aquifer has little potential to be developed. The risk of groundwater contamination occurring as a result of the proposed development is considered very low; with the consequences thereto insignificant. If the facility is designed, constructed and managed according to the norms of the industry, no further mitigatory actions are required. The site is considered suitable for development as filling station.

Dr Roger Parsons
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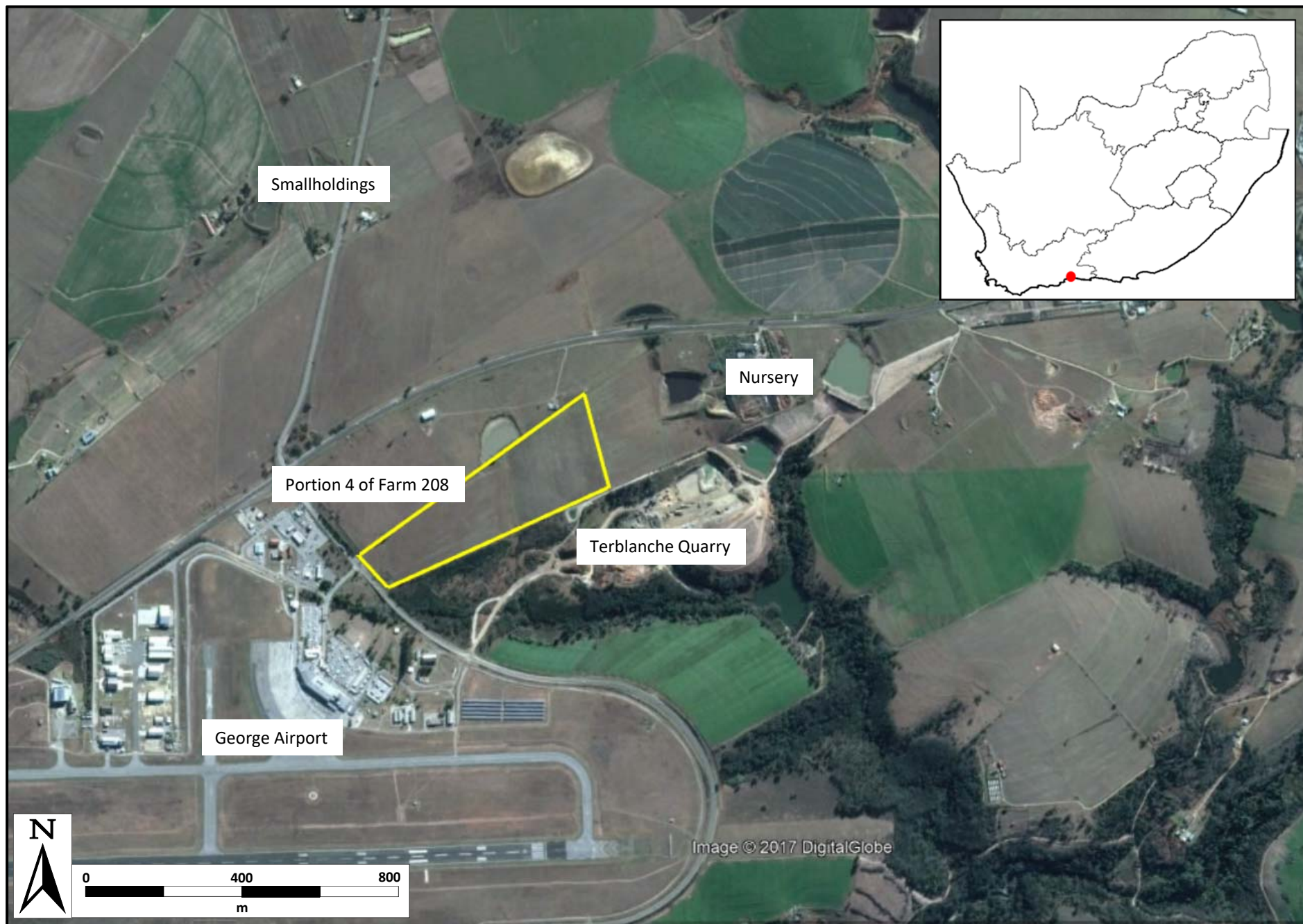


Figure 1: Locality map showing land use around the proposed development site.

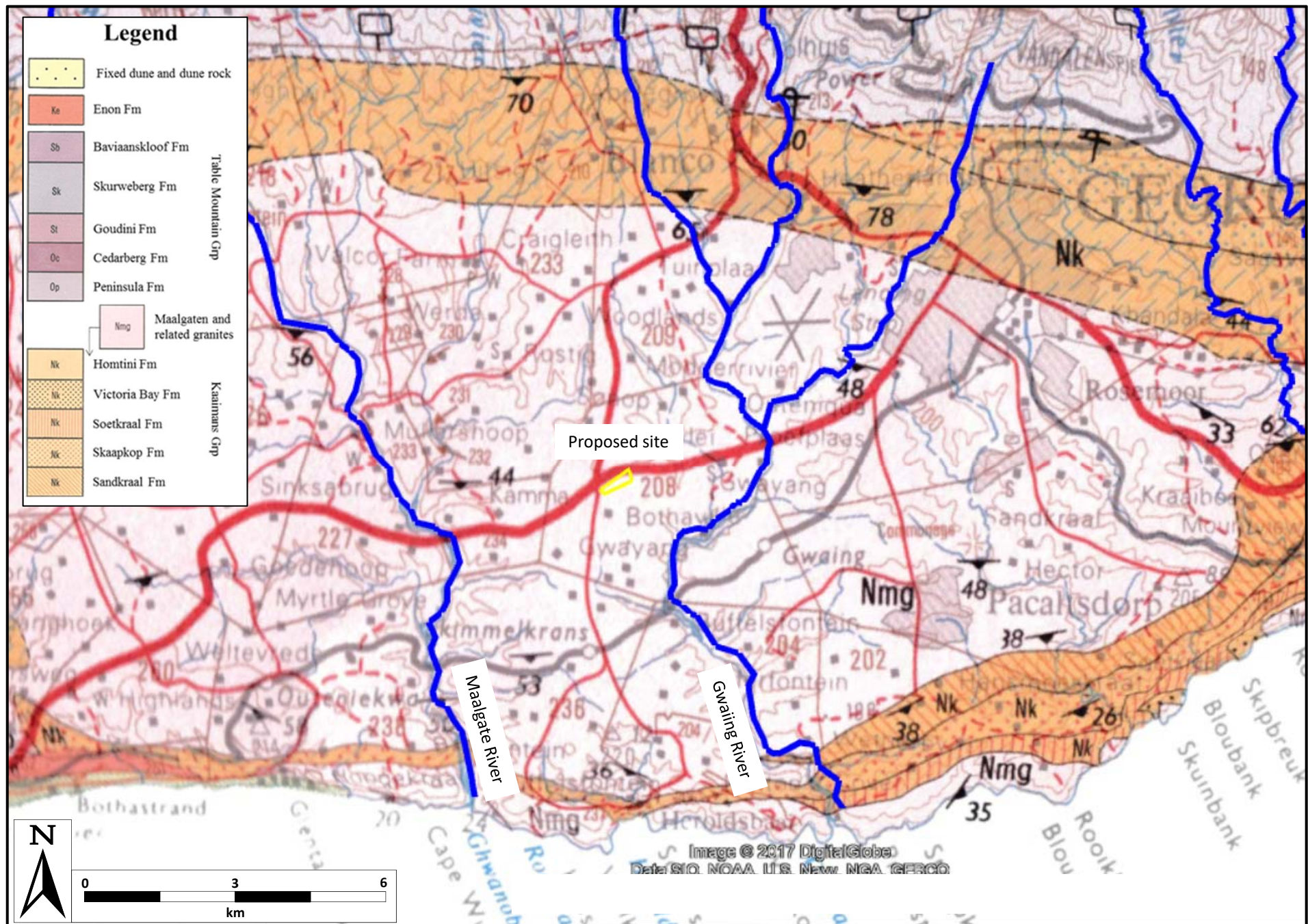


Figure 2: Geological map of the greater George area (from Coetzee, 1979).

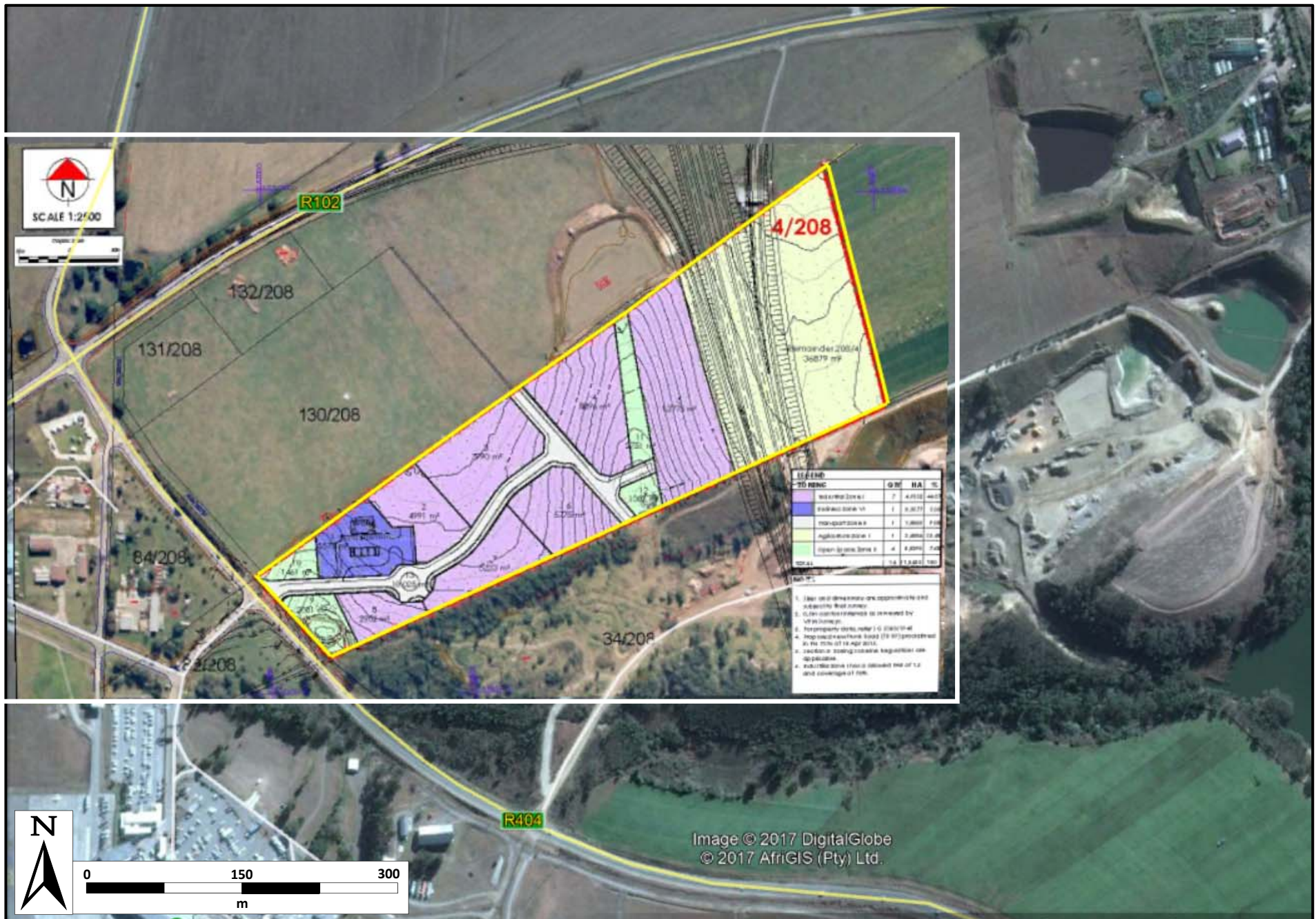


Figure 3: Revised site development plan prepared by Marike Vreken Urban & Environmental Planners overlain on a Google Earth image.

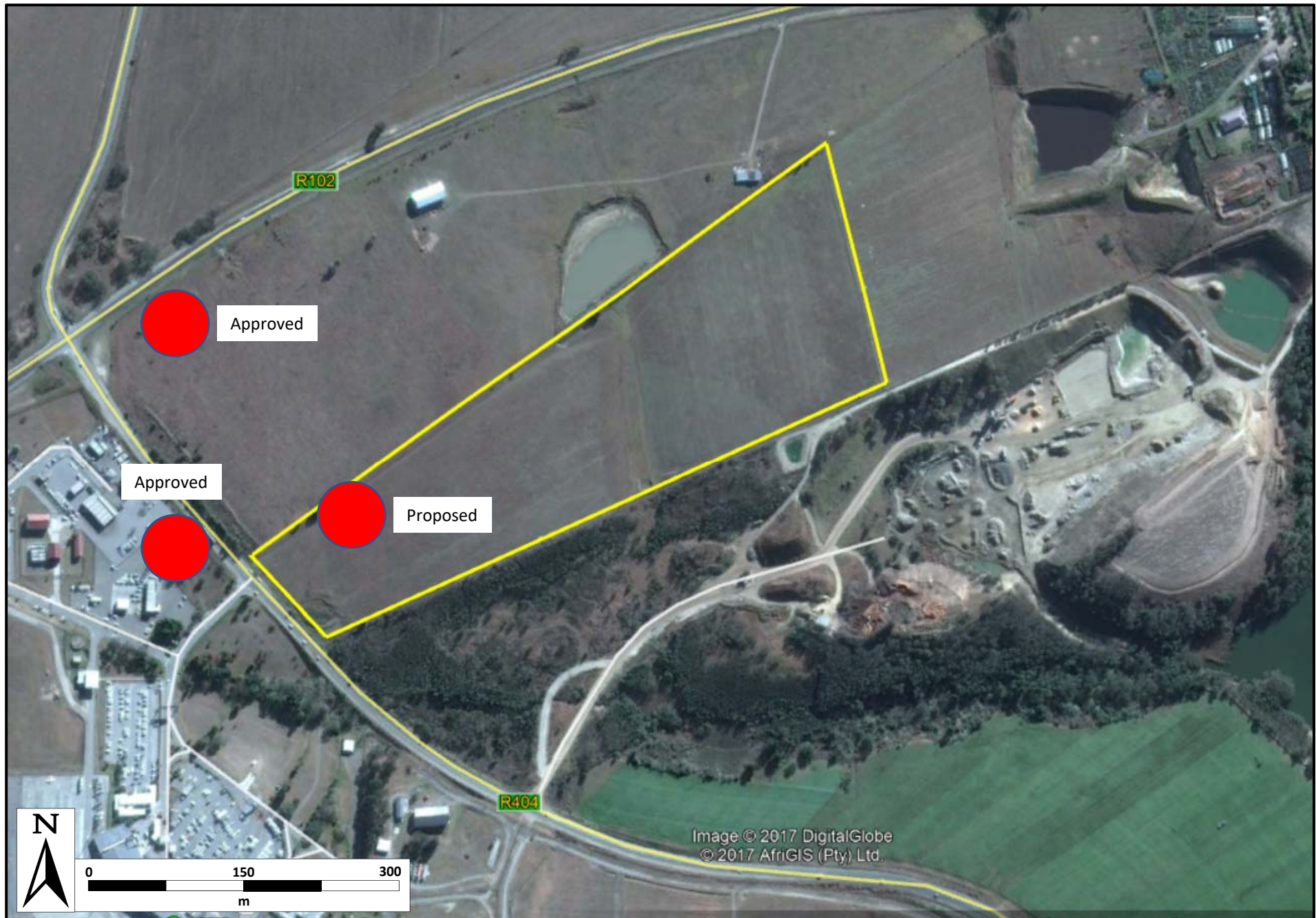


Figure 4: Location of two other sites approved for development as filling station in relation to the site currently under investigation.

GEOTECHNICAL REPORT

PROPOSED NEW INDUSTRIAL & COMMERCIAL DEVELOPMENT ON PORTION 4 OF GWAYANG 208, GEORGE

26 January 2018

Revision 0



Prepared by:


**OUTENIQUA GEOTECHNICAL SERVICES
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Prepared for:

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Authors qualifications and affiliations:

Iain Paton holds a Bachelor's degree with Honours in Geology and a Master's degree in Geotechnical Engineering and is a professionally registered engineering geologist with 19 years' experience in the mining, energy and construction industries. Iain Paton is a registered with the South African Council for Natural and Scientific Professions (Pr Sci Nat # 400236/07), the South African Institute of Engineering and Environmental Geologists (SAIEG), the Geotechnical Division of the South African Institute of Civil Engineering (SAICE) and the Institute of Municipal Engineering of South Africa (IMESA).

Declaration of independence:

The author of this report is independent professional consultant with no vested interest in the project, other than remuneration for work associated with the compilation of this report.

General limitations:

1. The investigation has been conducted in accordance with generally accepted engineering practice, and the opinions and conclusions expressed in the report are made in good faith based on the information at hand at the time of the investigation.
2. The contents of this report are valid as of the date of preparation. However, changes in the condition of the site can occur over time as a result of either natural processes or human activity. In addition, advancements in the practice of geotechnical engineering and changes in applicable practice codes may affect the validity of this report. Consequently, this report should not be relied upon after an elapsed period of one year without a review by this firm for verification of validity. This warranty is in lieu of all other warranties, either expressed or implied.
3. Unless otherwise stated, the investigation did not include any specialist studies, including but not limited to the evaluation or assessment of any potential environmental hazards or groundwater contamination that may be present.
4. The investigation is conducted within the constraints of the budget and time and therefore limited information was available. Although the confidence in the information is reasonably high, some variation in the geotechnical conditions should be expected during and after construction. The nature and extent of variations across the site may not become evident until construction. If variations then become apparent this could affect the proposed project, and it may be necessary to re-evaluate recommendations in this report. Therefore, it is recommended that Outeniqua Geotechnical Services is retained to provide specialist geotechnical engineering services during construction in order to observe compliance with the design concepts, specifications and recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction. Any significant deviation from the expected geotechnical conditions should be brought to the author's attention for further investigation.
5. The assessment and interpretation of the geotechnical information and the design of structures and services and the management of risk is the responsibility of the appointed engineer.

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Appendix 2 – Soil profiles

Appendix 3 – Lab test results

Appendix 4 – DCP test results

1. Introduction

1.1 Background information

A new light industrial and commercial development is proposed on Portion 4 of Farm Gwayang 208 in the District of George in the Western Cape (see **Figure 1** for locality map). The proposed development includes a filling station and light industrial units for support services for the nearby George Airport. New structures are likely to include single or double storey steel portal frame and masonry buildings and underground fuel storage tanks (UST's). Internal access roads, parking areas green open spaces are included in the proposed site development plan (refer to SDP in **Appendix 1**).

The geotechnical nature of the site needs to be investigated for planning purposes, as well as to facilitate the engineering design of structures and civil services.

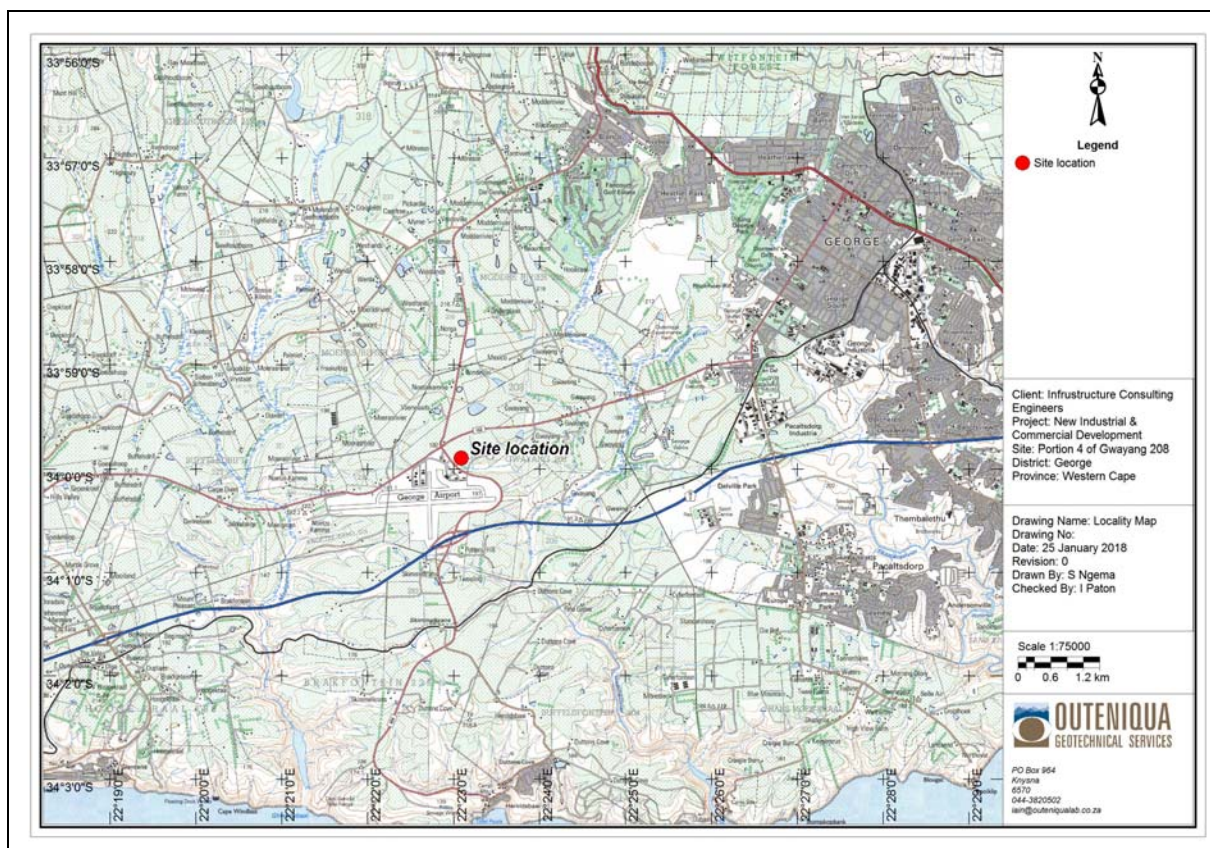


Figure 1: Locality map

1.2 Scope of work

The scope of work for the investigation is as follows:

Desk Study:

- Review all available information of the location, topography and geology of the site.

Site Work:

- Conduct a site walk over survey to assess the general terrain and any obvious geotechnical risks associated with development of the site;
- Excavate and profile 6 test pits to ~2.5m deep with a TLB;
- Collect soil samples for laboratory testing;
- Conduct DCP tests at each test position.

Laboratory Tests:

- 3 x Foundation Indicator tests;
- 3 x Mod AASHTO/CBR/Indicator tests.

Assessment report:

Preparation of a concise factual and interpretive report with an assessment of the geotechnical conditions and constraints, with recommendations on:

- Foundation design for structures (including founding depths, estimated allowable safe bearing pressures).
- Design of roads and civil services;
- Any other precautions to be taken with regards to the geotechnical conditions for the proposed development.

1.3 Available information

The following maps & plans were available for consultation:

- 1:250 000 Geological map of the area, obtained from the Council for Geoscience;
- Topo-cadastral data for the area, obtained from the Surveyor Generals office of the Department of Land Reform and Rural Development.
- Aerial photography of the area, obtained from Google Earth.
- Site development plans, provided from Marike Vreken Town Planners.

2. Site description

The proposed site is vacant agricultural pasture that is located opposite the entrance to the George Airport (see **Figure 2**), and is accessed from the western side, off the airport road. The topography on the site is gently undulating, with a maximum slope gradient of ~1:13, draining towards the south into tributaries of the Gwaing River (see **Figure 3**). The vegetation cover consists entirely of long grass, and there are two small natural drainage lines crossing the property with small earth dams on each (see **Figure 4**). The site is located in a wet climatic region with average annual rainfall in excess of 650mm.

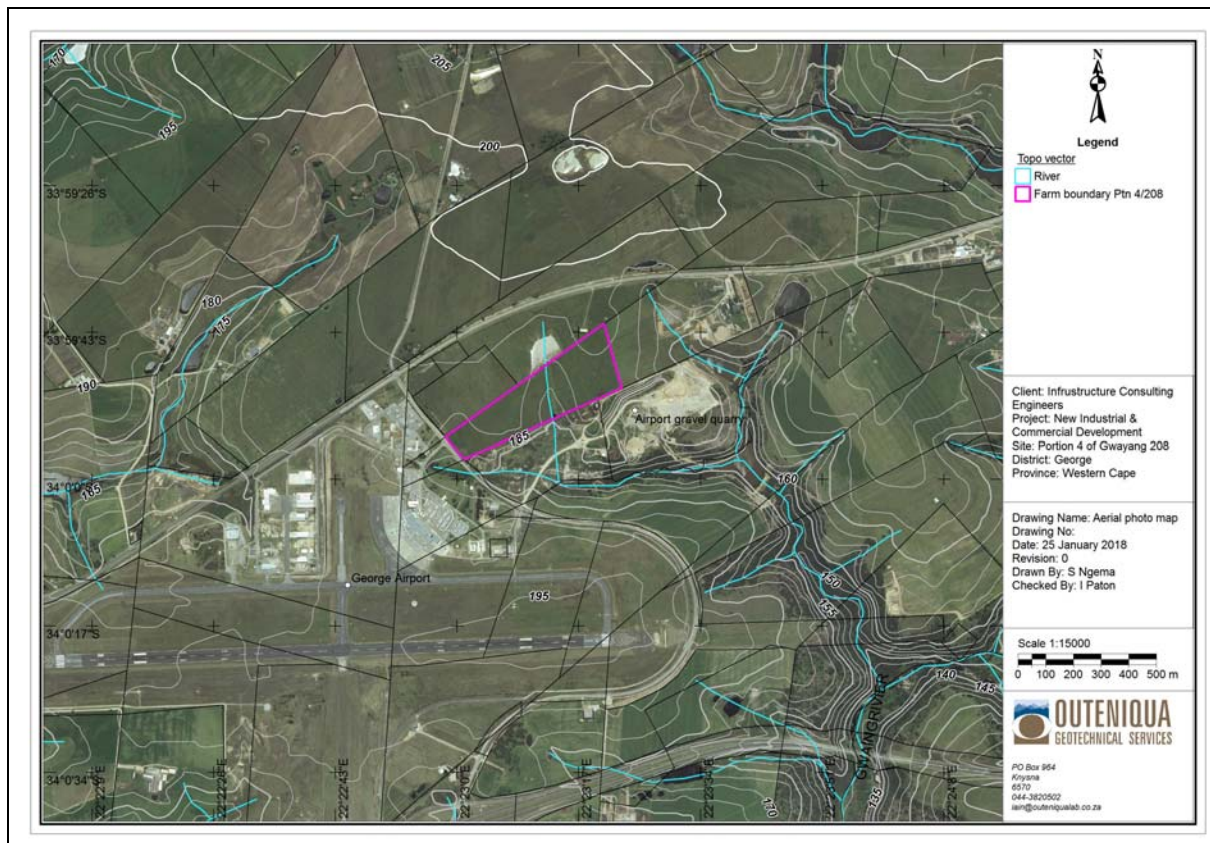


Figure 2: Aerial photo map of the site

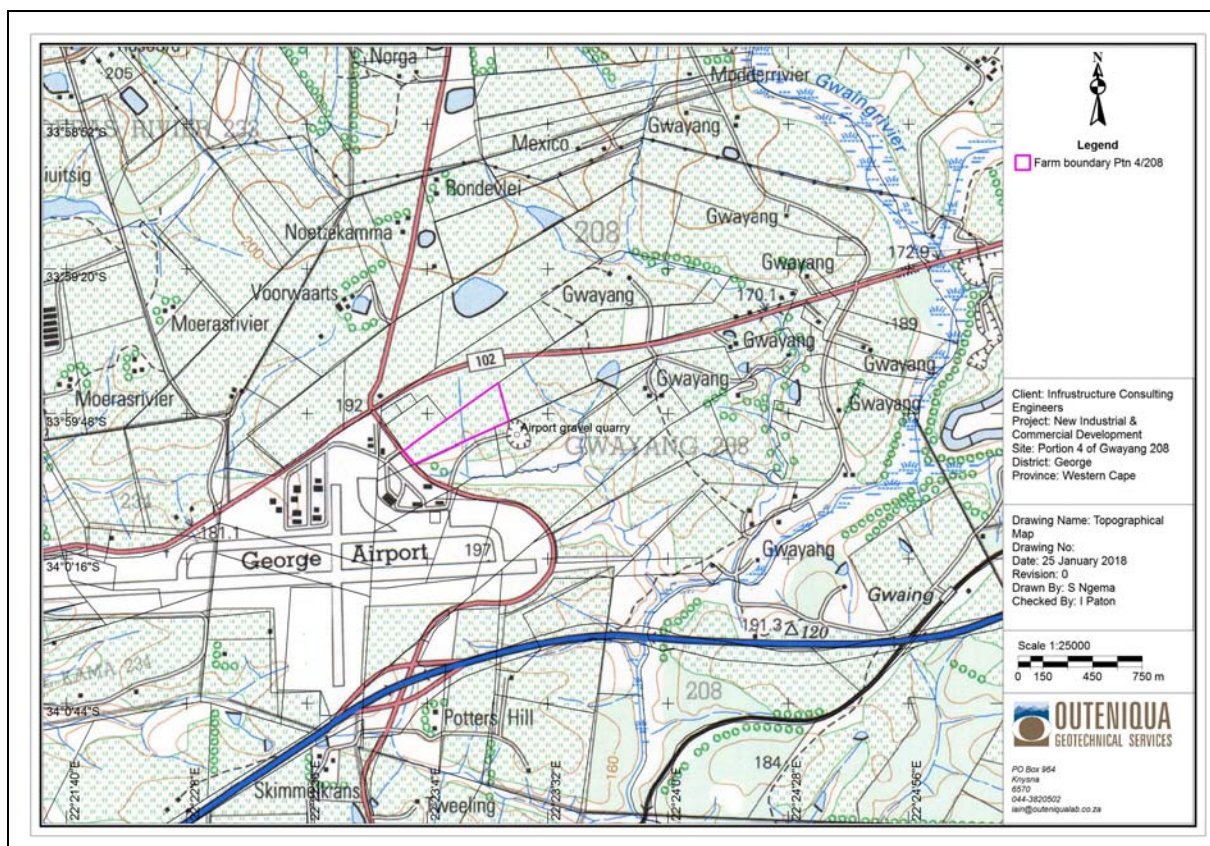


Figure 3: Topographical map of the area

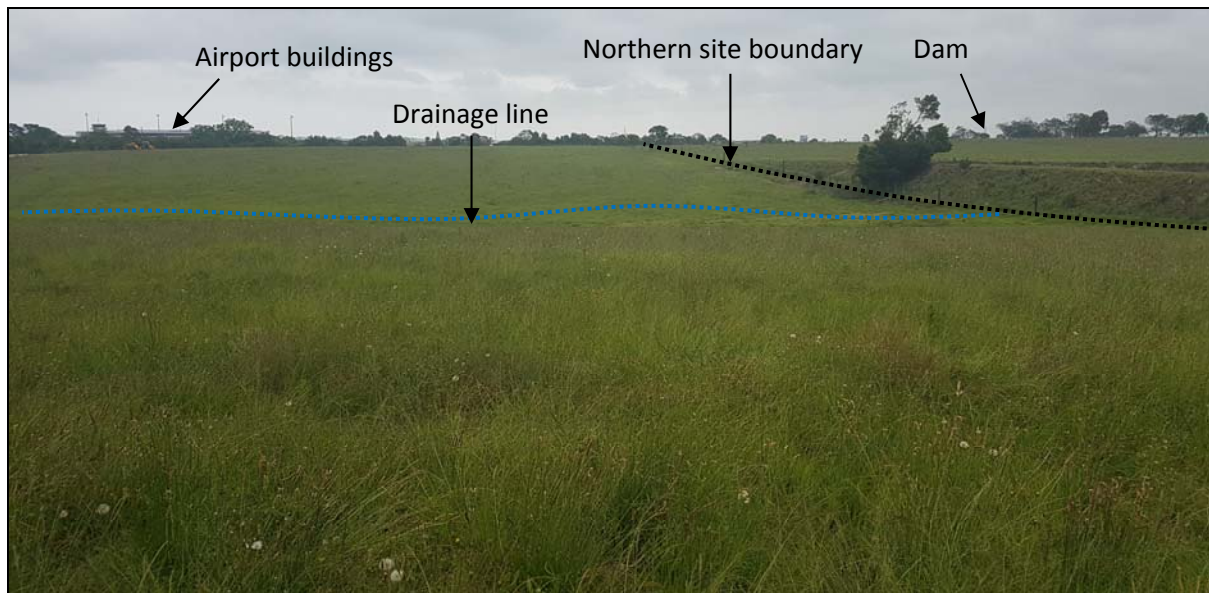


Figure 4: View across the site to the west from the eastern side (note small earth-wall dam along property boundary on right)

3. Methods of investigation

An initial site walk-over of the site was conducted to assess the site terrain, topographic features and any obvious geotechnical issues. This was followed by a subsurface investigation consisting of six test pits, that were excavated across the site using a TLB/backactor in order to gain important geotechnical information regarding the nature of the subsoil conditions (soil types, moisture levels, etc.). The soil profiles and photographs of the test pits are included in **Appendix 2** of this report.

Representative samples of different soil types were collected from test pits for Foundation Indicator tests and Mod/CBR/Indicator tests. The tests were performed at a SANAS-Accredited laboratory (Outeniqua Lab), in accordance with the TMH1 and ASTM methods. Details of the tests are included in **Appendix 3** of this report.

In situ dynamic cone penetrometer (DCP) tests were conducted at each test pit position from NGL to a depth of ~2m or refusal. Details of the tests are included in **Appendix 4** of this report.

4. Results of the site investigation

4.1 Regional geology

The 1:250 000 geological map indicates that the site is underlain by granite of the George pluton (Maalgaten Suite) which intruded into sedimentary rocks of the Kaaimans Group approximately 525 million years ago (see **Figure 5**). The granite does not outcrop on the site, and is typically deeply weathered, forming a thick residual clay saprolite. The geology of the site is typical of the George area, and is generally regarded as suitable for urban development purposes. There are no major geological faults or soluble rock formations in the immediate vicinity of the site, and the seismic risk for the area is low.

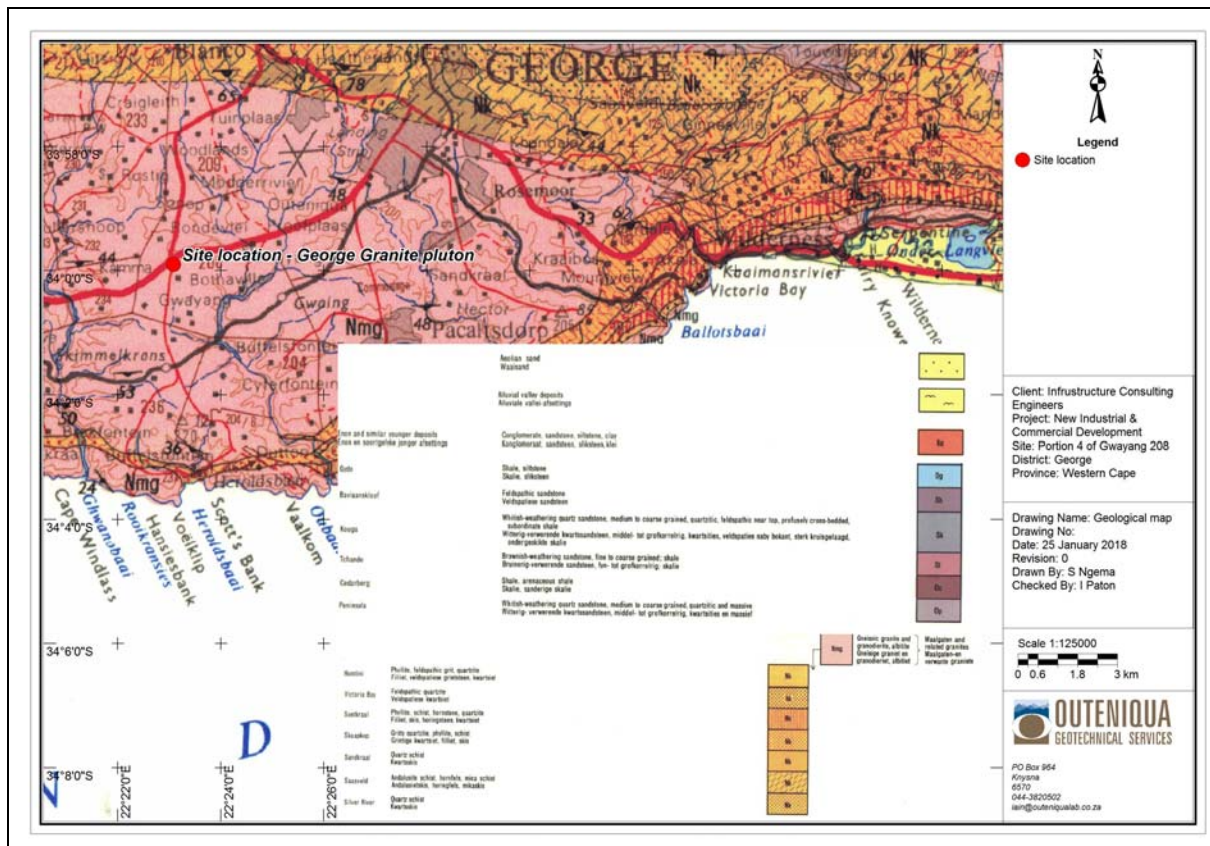


Figure 5: Geological map of site

4.2 Local soil and rock types

The test pits indicate that the natural profile underlying the site consists of one or more transported horizons of sand, silty sand, clayey gravel and localised cobble layers (alluvium), which are underlain (or interbedded) by a thin pedogenic gravel horizon (ferricrete), followed by residual clay, gravelly silt and silty gravel, which is a product of insitu weathering of the underlying granite (see **Figure 6**). The general soil profile is quite variable between the test pits and consists of both granular and cohesive soil types. The thickness of the upper transported horizons varies significantly between test positions and is generally thicker near natural water courses (especially at TP1). No bedrock was encountered in any of the test pits. Clay horizons show signs of activity, in the forms of slickensided and micro-shattered structure.

The consistency of the soil is quite variable in the upper 1.8m, ranging from medium dense (highly compressible) to dense, but is consistently dense and intact below that depth, with only minor collapse settlement possible along fractures in clayey or silty (cohesive) residual granite material. Both settlement and heave is possible from the soil types observed in the test pits.

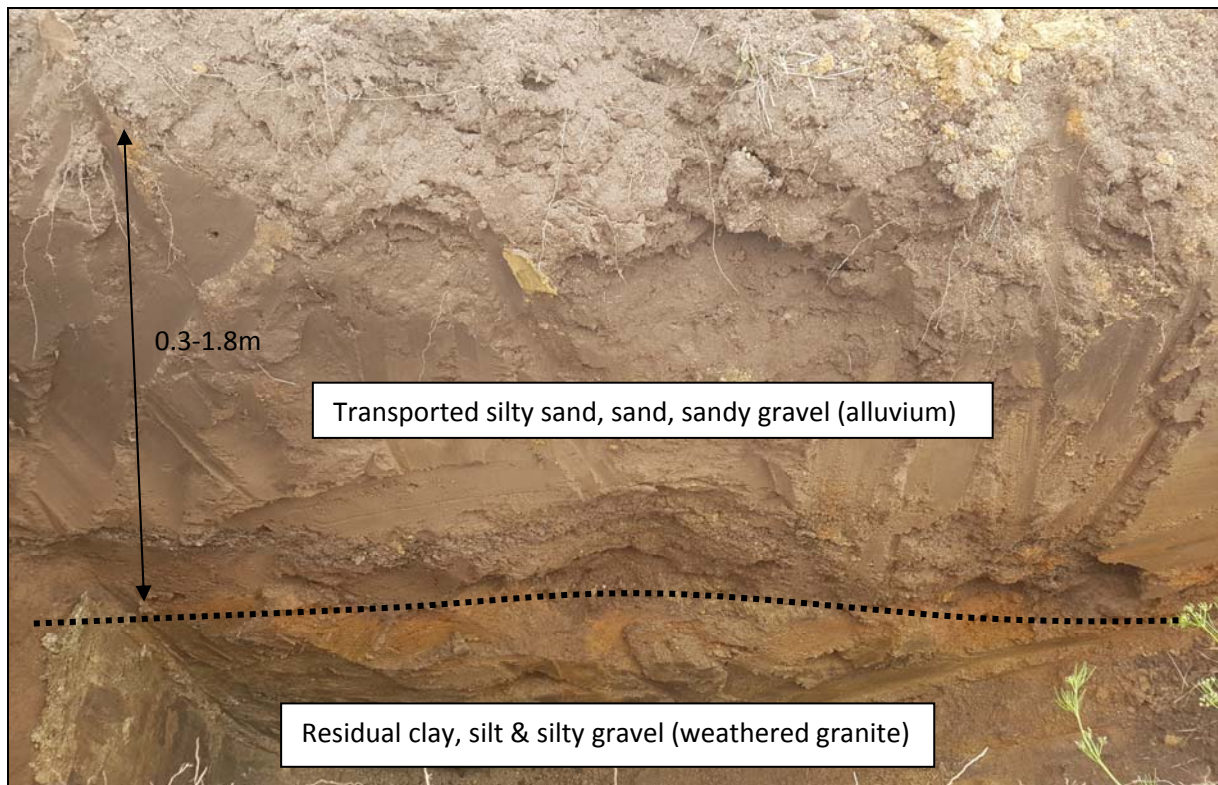


Figure 6: Photo of the general soil profile seen in test pits

A summary of the soil types and thicknesses is given in **Table 1**.

Table 1: Soil types and thicknesses (in mm)

<i>Test pos. No.</i>	<i>Imported (fill) soil</i>	<i>Transported/ pedogenic soil</i>	<i>Residual soil</i>	<i>Rock</i>	<i>Total depth of test pit</i>	<i>Refusal of TLB?</i>
TP1	-	1800	1100	-	2900	No
TP2	-	600	2100	-	2700	No
TP3	-	500	2300	-	2800	No
TP4	-	900	1700	-	2600	No
TP5	-	400	1800	-	2200	No
TP6	-	300	2100	-	2400	No

4.3 Laboratory tests

Representative samples of the insitu soil types were collected for Foundation Indicator tests to determine the particle size distribution (grading) and Atterberg limits. The results of the Foundation Indicator tests are shown in **Table 2**.

Table 2: Summary of Foundation Indicator test results

Test Pit No	Sample Depth (mm)	Atterberg Limits			Particle Analysis (%)				MC*	PE**	USC ***
		PI	LL	LS	Clay	Silt	Sand	Gravel			
TP1	1500-1800	18	37	9	22	11	44	23	16.6	Low/med	SC
TP2	600-1000	23	58	12	41	7	38	14	29	Low/Med	SC
TP4	900-1300	11	25	6	21	26	35	18	8.8	Low	SC

* Insitu Moisture Content ** Potential Expansiveness *** Unified Soil Classification

The results indicate that the samples tested are dominated by sand-sized particles but contain a significant amount of clay and silt-sized particles (fines) and minor gravel. The samples are all classified under the USC system as SC-Clayey sands, and display a low to medium plasticity index, and low to medium overall potential expansivity. Moisture contents are highly variable from low to high (8.8-29.0%). The lab results indicate mildly problematic fine-grained soils.

Representative samples of insitu soils were collected for Mod/CBR/Indicator tests to determine the subgrade potential for pavement design and as selected material for filling under floors. The results of the tests are summarised in **Table 3**.

Table 3: Summary of Mod/CBR/Indicator test results

Test Pit No	Sample Depth (mm)	CBR at					Swell (%)	PI (%)	GM	MDD/OMC	TRH14 Class
		100 %	98%	95%	93%	90%					
TP1	600-1300	127	96	63	38	18	0.0	NP	0.68	2088/6.6	G8
TP2	600-1000	1	1	1	1	0	10.34	25	0.64	1724/19.1	<G10
TP2	1000-2700	2	2	1	1	1	6.94	13	1.43	1989/7.0	<G10

The results indicate that the residual granite displays exceptionally low soaked-CBR values, high swell and low grading moduli (fine grained), which indicates a poor quality construction material under soaked conditions (G10 quality or less). The near surface alluvial sand material from TP1 is marginally better, but nevertheless this is sporadic and there is no consistently high-quality material expected from this site. Further recommendations are given in **Chapter 6**.

4.4 Insitu tests

The DCP tests are quite variable between the test positions, and the most variation was observed in TP1 and TP2 on the western side of the site near a wide natural drainage line. In these two tests, the upper 1.2m to 1.6m of the profile varies between medium dense and dense. The consistency of soil recorded in other tests (TP3-6) is significantly better, with dense conditions recorded below 0.6m.

The DCP tests do not indicate any severely weak soils, and all indications are that the soil will have adequate bearing capacity for light structures on conventional shallow

spread foundations with minimal improvement of the founding medium required.

5. Geotechnical assessment

5.1 Terrain mapping units

The site is broadly mapped according to the main geotechnical constraints, and is presented in **Figure 8**.

Terrain 1 constitutes the vast majority of the site which is underlain by potentially active, compressible and/or collapsible soils, although the expected levels of movement are unlikely to be severe. Terrain 2 consists of natural drainage lines where seasonally marshy soil conditions can be expected and is generally considered as a no-go area for development for environmental reasons. Details of the geotechnical nature of the soils in the remaining area of Terrain 1 are discussed in the following chapters.



Figure 8: Geotechnical map of site

5.2 Bearing capacity and settlement

Observations made during the test pitting and analysis of DCP tests indicates that the consistency of the upper 1.6m of the soil profile is slightly variable (medium dense to dense) across the site, but generally improves to dense consistency below this depth.

Slightly variable conditions are expected adjacent to natural drainage lines, due to the possible presence of perched water tables (subsoil seepage) and/or fine-grained/weak

alluvial soils, which may require improved foundations and possibly importation of better quality materials to improve the founding conditions (e.g. TP1). The soil consistency seems to improve towards the east, where dense weathered granite is encountered at shallow depths.

Ultimate bearing capacity is unlikely to be a significant problem for light structures (single/double story), and settlement can be easily mitigated with proper foundation preparation and adequate compaction below foundations. Foundations will require reinforcement to resist the expected soil movements. Foundation design recommendations are given in **Chapter 6**.

5.3 Heave

The soil profile contains some potentially expansive clay horizons. Lab results on these soils indicates a low to medium plasticity index (~11-25) and variable clay content (21-41%), but the clay horizons are generally thin (<1m thick) and the total heave is estimated at not more than 7.5mm (H category), and this is unlikely to have a significant effect on the engineering design.

5.4 Site drainage & groundwater

The terrain is gently sloping and therefore the site is generally well drained towards the natural drainage lines that traverse the site. There is one small earth wall dam on the site, and one on the adjacent (northern) farm. Infiltration of rainwater will be restricted by typically fine-grained soils with low permeability, and most rainfall will tend end up as run-off or accumulate in dams or localised depressions on the site.

No perched water tables were encountered in the test pits at the time of the investigation, but the investigations were undertaken during a very dry climatic period. Saturated soils (perched water tables) can normally be expected in Terrain 2 (natural water courses). Lesser amounts of groundwater seepage can normally be expected in the upper 1m of the profile in Terrain 1 (mainly during winter), as the vertical infiltration of rainwater will be restricted by relatively impermeable fine-grained soils at shallow depths, i.e. seepage can be expected in the topsoil, and this may frustrate earthworks.

5.5 Slopes

The site has a maximum slope gradient of 1:8 and no global slope instability is anticipated.

5.6 Excavations

No shallow rock (hard excavation) is expected anywhere on the site, and all excavations to at least 3m are classified as "Soft". Vertical trench sidewalls are expected to be unstable, requiring battering to 45° or lateral support.

5.7 Site classifications

Each terrain is classified according to the site designations assigned under the Code of Practice for Foundations and Superstructures issued by the Joint Structural Division (JSD) of the South African Institution of Civil Engineering and Institution of Structural Engineers (SAICE/IStructE). The applicable site class designations are provided in **Table 4**.

Table 4: Soil classifications

<i>Terrain unit</i>	<i>Geotechnical Constraint</i>	<i>Soil Class</i>	<i>Total expected heave (mm)</i>	<i>Total expected settlement (mm)</i>
Terrain 1	Expansive soil	H	<7.5	-
	Compressible and/or collapsible soils	C1	-	<10
Terrain 2	Marshy ground conditions	P	-	-

A summary of geotechnical constraints that potentially may affect the development of the site is tabulated in **Table 5**.

Table 5: Assessment of potential geotechnical constraints

<i>Geotechnical Constraint</i>	<i>Effect on the proposed development</i>	<i>Severity</i>	<i>Comment</i>
Collapsible and/or compressible soil	Soil horizons with a potentially collapsible and/or compressible fabric which may affect stability of foundations	Low-med	Fine grained soils are potentially compressible and/or collapsible and will require compaction as a precaution.
Differential settlement	Foundations placed in different soil types or rock may settle differentially.	Medium	Some variation can occur in the density of soil layers. Uniform compaction is important.
Bearing capacity	Foundations placed on soils with low bearing capacity will display unsuitable settlement.	Low	Bearing capacity generally not a problem for light structures if foundations are well prepared
Groundwater	Seepage, permanent or perched water tables affecting excavations.	Medium	Subsoil seepage may develop during wet periods
Active soil	Heaving clays affecting foundation stability	Low	Active clay horizons are generally thin
Excavations	Boulders or rock affecting excavations	Low	No hard excavations expected
	Unstable excavations requiring shoring	Medium	Temp. excavations are potentially unstable at angles exceeding 45°. Precautions must be taken for excavations deeper than 1m for safety reasons.
Slope stability	Geological instability causing damage to structures founded on slopes	Low	No steep natural slopes.
	Soil creep or erosion by storm water	Low	Erosion unlikely to pose a significant threat but contractors should monitor erosion from site.

<i>Geotechnical Constraint</i>	<i>Effect on the proposed development</i>	<i>Severity</i>	<i>Comment</i>
Flood potential	Low lying areas affected by poor drainage.	Low	Most of the site is generally well drained, but detailed land survey required to assess low points and delineate drainage lines. Civil engineers to assess stability of dam on adjacent property
Unconsolidated fill	Uncontrolled fill material affecting foundations	Low	No uncontrolled fill recorded in test pits or visible on site
Sources of construction material	Distance to sources of construction material affecting costs	Low	Commercial sources of better material are readily available in the area.

6. Recommendations

The design of foundations and services lies within the consulting engineer's responsibility and the following recommendations are based on limited information gained from the site investigation and although the confidence in the information is high, some variations can occur between information points. All geotechnical information must be confirmed during the design and construction process and any significant variations are to be brought to the attention of the authors for comment or further recommendations. It is recommended that the structural engineer discuss his/her conceptual design with the geotechnical specialist to ensure that any calculations and recommendations are in line with current information.

The site has a gently sloping topography and some earthworks may be required to terrace the site or make level platforms for construction purposes. The insitu soils are generally fine-grained and poor quality natural materials. Structural (load-bearing) fill material may have to be imported, unless adequate compaction can be achieved using insitu soils, but it may be difficult to select out better quality soils from bulk excavations, and this will require special oversight from the engineer. Wet conditions may also hamper compaction of soils with >50% fines content (clay/silt). Any potential fill material excavated from site should be identified for approval by the engineer. Any unsuitable material exposed during earthworks, such as clay, foreign matter (e.g. rubbish, oversize rubble) and organic matter, should be removed and replaced where necessary with suitable filling material as directed by the engineer. Vertical trench sidewalls deeper than 1m may be unstable and should be battered back to 45° for safety. Deep vertical excavations exceeding 3m may require special attention. All retaining walls should be properly designed with adequate drainage, taking into account active earth pressure (assume $K_a = 0.33$ for preliminary calcs). Allowances should be made for dewatering, by way of a sump pump, for deep excavations, e.g. USTs.

The recommended foundation type for single, double and triple storey structures is reinforced concrete strip/pad foundations. The founding medium must be compacted to at least 95% Mod AASHTO density or 20mm/blow of a DCP. The recommended founding depth is 1m below natural ground level (NGL), or a minimum depth on cut platforms of PL-0.7m. Bearing pressures should be limited to max 150kPa to minimise settlement. Heavier structures will require deeper foundations or improvement of the founding medium with a layer of imported G5 material. The engineer may also consider the use of light RC rafts. All foundation trenches should be inspected by the structural engineer

before casting concrete, preferably with assistance of a geotechnical engineer.

For access roads, the insitu subgrade is G10 and it is recommended that an allowance is made for importation of two 150-mm layers of G7 SSG below the subbase. The recommended layerworks are given in **Table 6**. Subsoil drains are recommended on the up-slope side of all roads.

Table 6: Pavement design recommendations

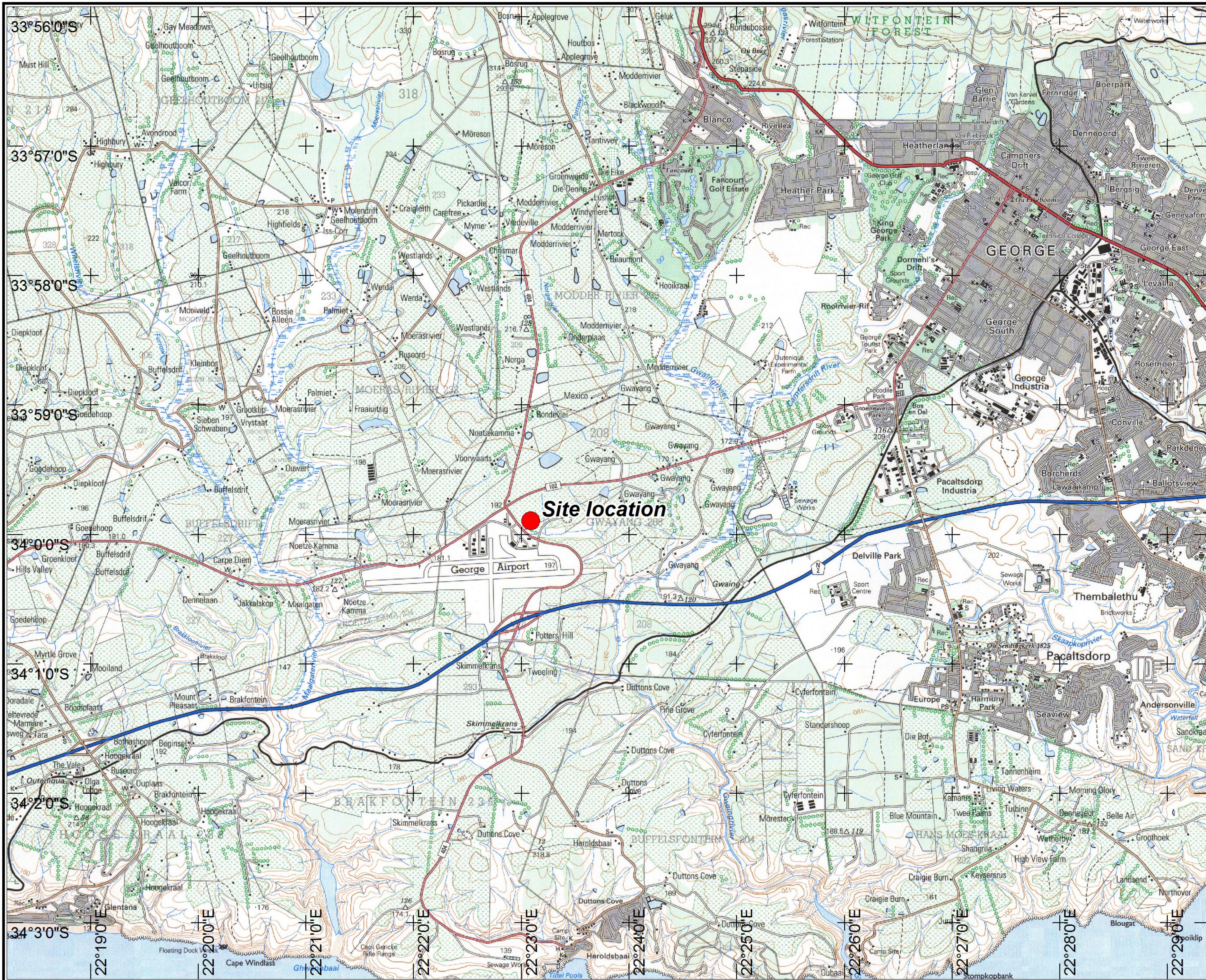
<i>Layer</i>	<i>Material</i>	<i>Thickness</i>	<i>Required Compaction</i>
Pavers*	Cement interlock paving on 25mm sand bedding	60 / 80 mm	25 / 35 MPa
Subbase	Imported G4/5 gravel	150mm	95% Mod AASHTO
SSG	Imported G7 gravel	300mm	93% Mod AASHTO
OR			
Seal	13.2mm Cape Seal or 40mm HMA		
Base course	Imported G2/4	150mm	98% Mod AASHTO
Subbase	Imported G4/5 gravel	150mm	95% Mod AASHTO
SSG	Imported G7 gravel	300mm	93% Mod AASHTO

7. Conclusions

The site is generally suitable for the proposed development in terms of the geology and soil conditions, but there are some important constraints, such as natural drainage lines and potentially compressible/collapsible soils. However, the geotechnical conditions are unlikely to be severely problematic, and conventional shallow reinforced foundations are anticipated. Some precautionary measures are recommended for the design of earthworks and foundations in order to cater for the expected soil conditions and potential soil movements. The recommendations are generally considered standard practice and should not significantly affect project feasibility.

Appendix 1

Maps



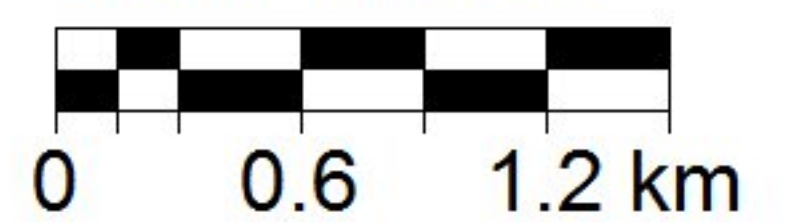
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● Site location

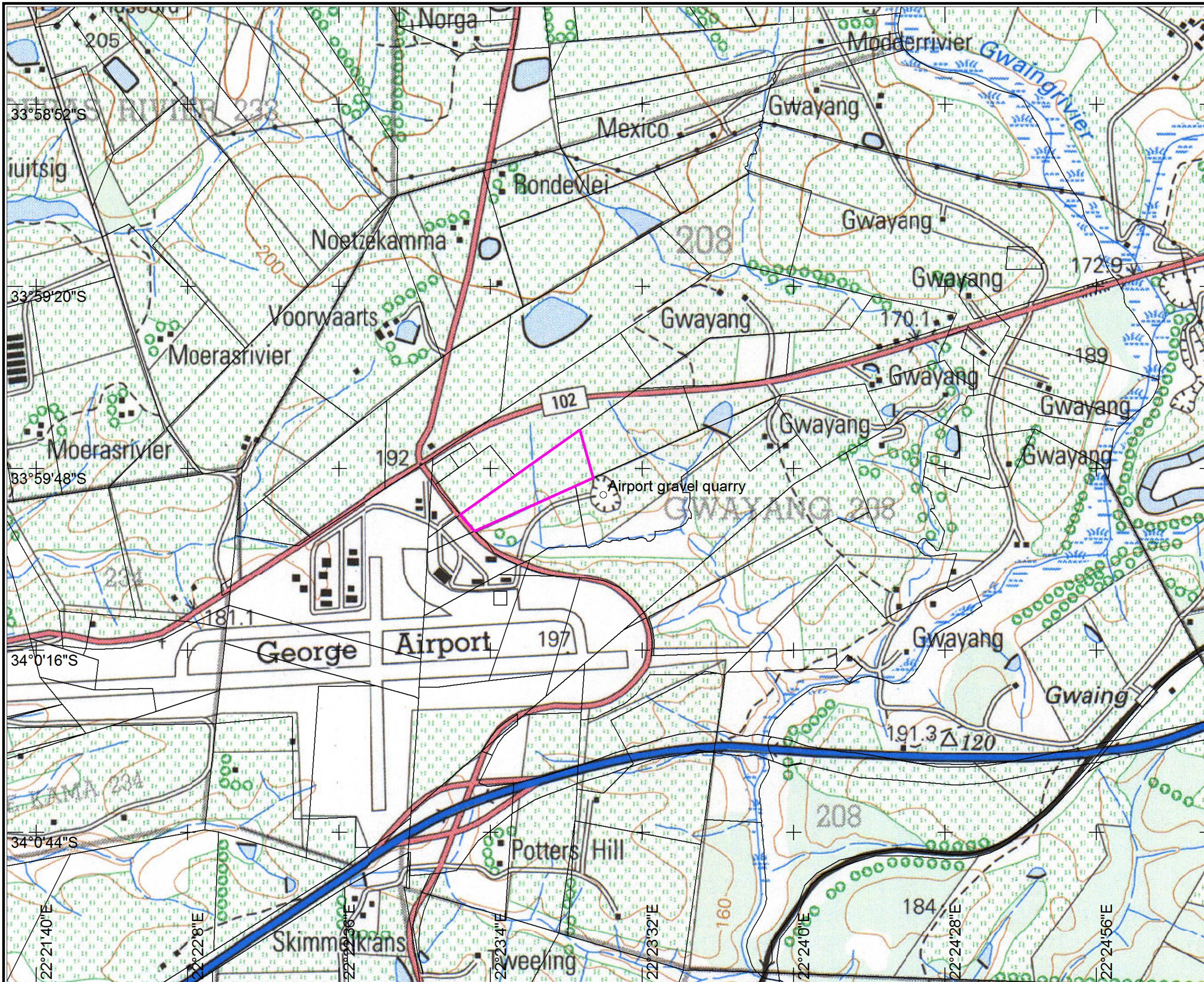
Client: Infrustructure Consulting Engineers
Project: New Industrial & Commercial Development
Site: Portion 4 of Gwayang 208
District: George
Province: Western Cape

Drawing Name: Locality Map
Drawing No:
Date: 25 January 2018
Revision: 0
Drawn By: S Ngema
Checked By: I Paton


Scale 1:75000



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Knysna
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iain@outeniqua.co.za



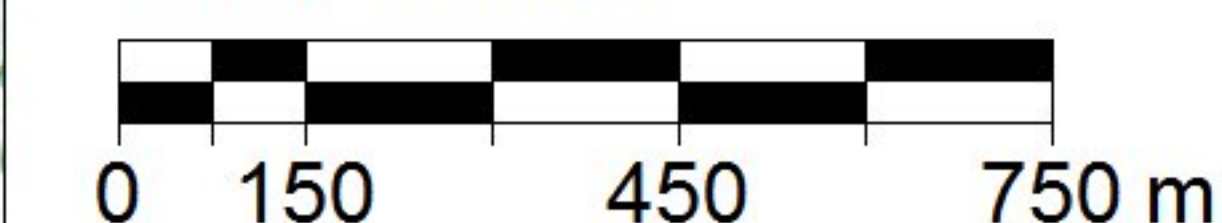
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 Farm boundary Ptn 4/208

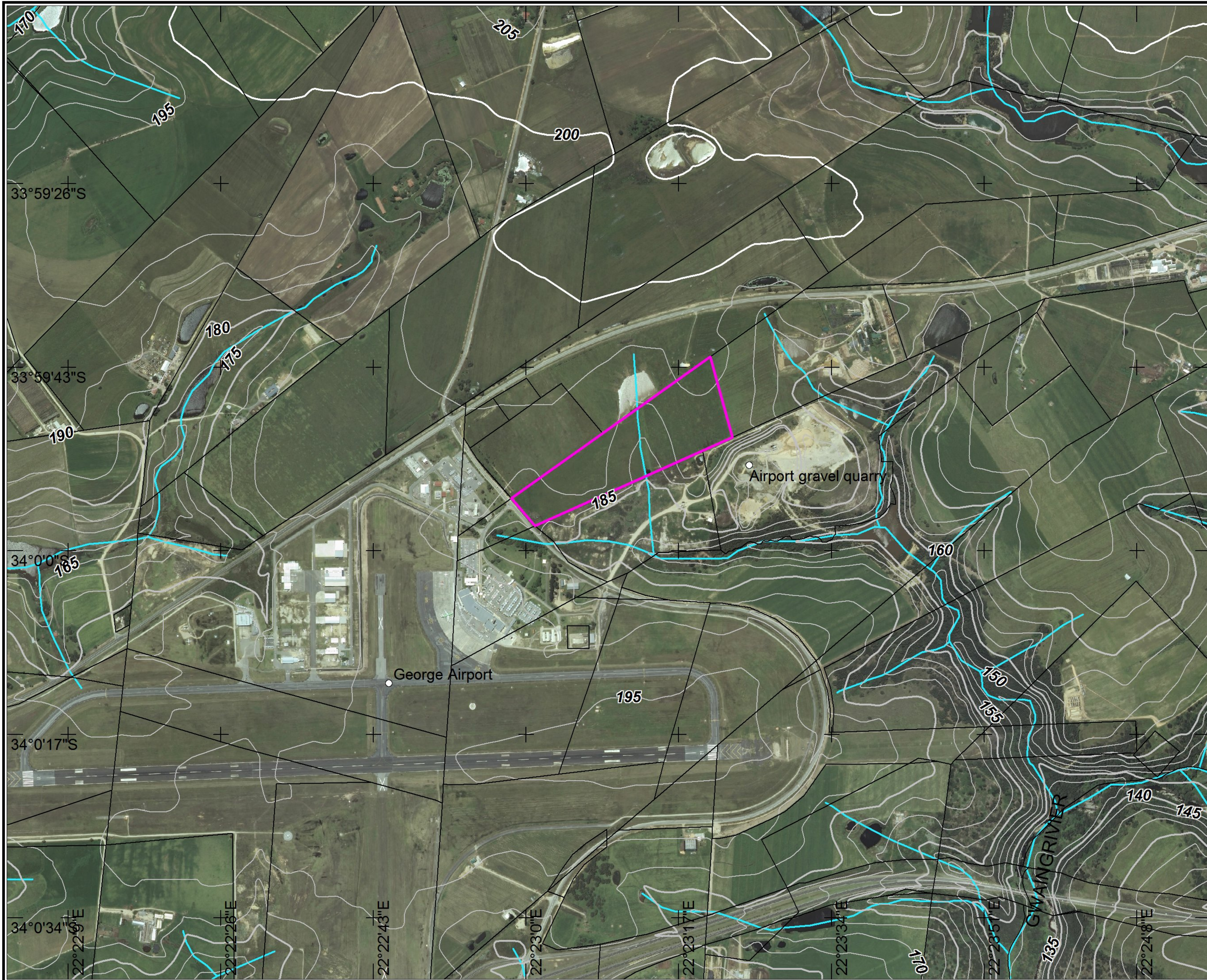
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Project: New Industrial & Commercial Development
Site: Portion 4 of Gwayang 208
District: George
Province: Western Cape

Drawing Name: Topographical Map
Drawing No:
Date: 25 January 2018
Revision: 0
Drawn By: S Ngema
Checked By: I Paton

Scale 1:25000



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Legend

Topo vector

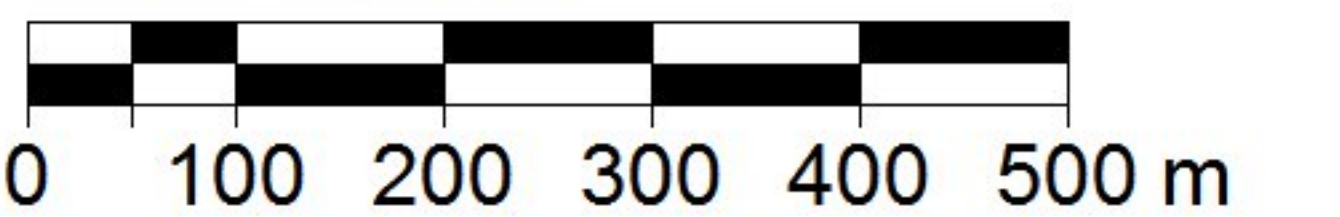
River

Farm boundary Ptn 4/208

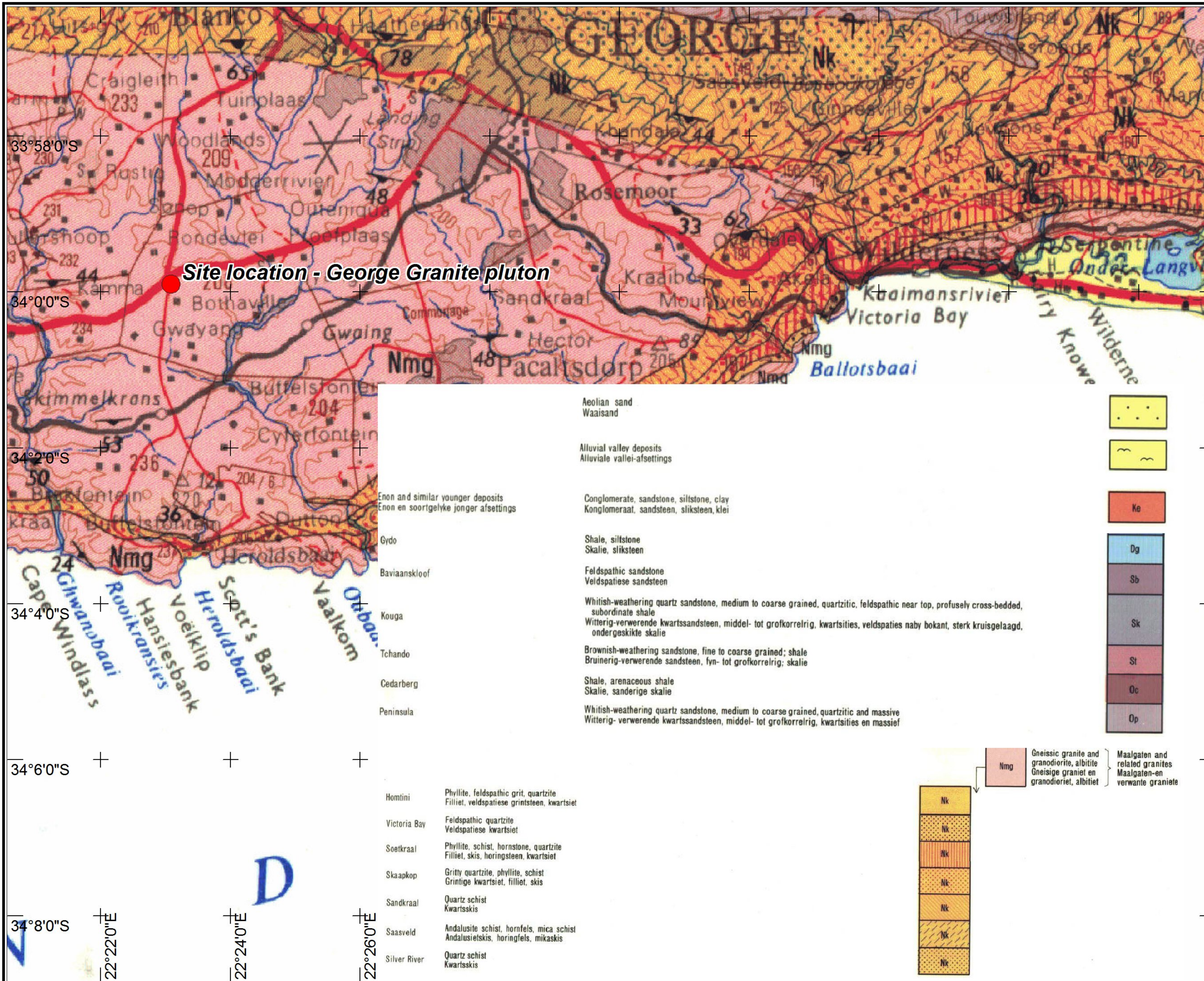
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Project: New Industrial & Commercial Development
Site: Portion 4 of Gwayang 208
District: George
Province: Western Cape

Drawing Name: Aerial photo map
Drawing No:
Date: 25 January 2018
Revision: 0
Drawn By: S Ngema
Checked By: I Paton

Scale 1:15000



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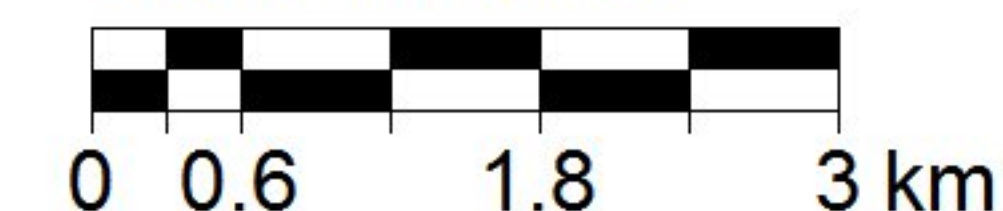
Legend

● Site location

Client: Infrustructure Consulting Engineers
Project: New Industrial & Commercial Development
Site: Portion 4 of Gwayang 208
District: George
Province: Western Cape

Drawing Name: Geological map
Drawing No:
Date: 25 January 2018
Revision: 0
Drawn By: S Ngema
Checked By: I Paton

Scale 1:125000






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Legend

Topo vector

-  River
-  Test positions
-  Farm boundary Ptn 4/208

Geotechnical Terrains

- Terrain 1 -
 Compressible/collapsible & active soils (C1/H)
- Terrain 2 - Watercourses -
 Saturated soils/marsh (P)

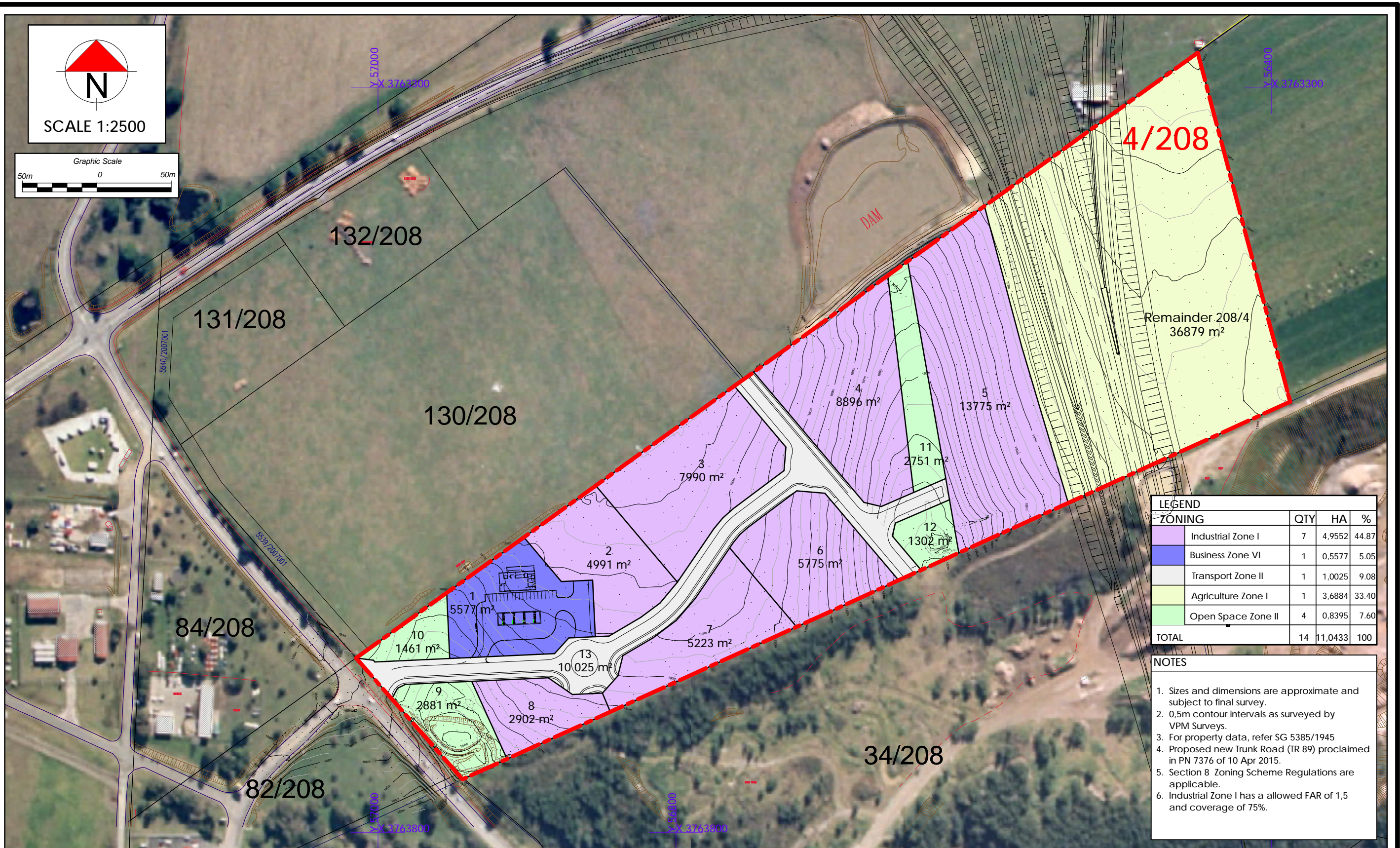
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Project: New Industrial & Commercial Development
Site: Portion 4 of Gwayang 208
District: George
Province: Western Cape

Drawing Name: Geotechnical map
Drawing No:
Date: 25 January 2018
Revision: 0
Drawn By: S Ngema
Checked By: I Paton

Scale 1:3500



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LEGEND			
ZONING	QTY	HA	%
Industrial Zone I	7	4,9552	44.87
Business Zone VI	1	0,5577	5.05
Transport Zone II	1	1,0025	9.08
Agriculture Zone I	1	3,6884	33.40
Open Space Zone II	4	0,8395	7.60
TOTAL	14	11,0433	100

- NOTES
1. Sizes and dimensions are approximate and subject to final survey.
 2. 0,5m contour intervals as surveyed by VPM Surveys.
 3. For property data, refer SG 5385/1945
 4. Proposed new Trunk Road (TR 89) proclaimed in PN 7376 of 10 Apr 2015.
 5. Section 8 Zoning Scheme Regulations are applicable.
 6. Industrial Zone I has a allowed FAR of 1,5 and coverage of 75%.

PLAN 4

SUBDIVISION PLAN

Portion 4 of the Farm
Gwayang No 208,
Division George

APPROVED IN TERMS OF SECTION 23(1) OF THE
GEORGE MUNICIPALITY'S BY-LAW ON
MUNICIPAL PLANNING AS PUBLISHED IN
P.N. 7481/2015 ON 1 SEPTEMBER 2015

MUNICIPAL MANAGER

DATE: _____

DRAWN:	MV	CHECKED:	MV
PLAN NO:	Pr16/48F208Ptn4Sub05		
PLAN DATE:	27 Nov 2017		
STORED:	z:\drawings\App\Pr16/48F208Ptn4Sub05.dwg		

COPY RIGHT:
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Appendix 2

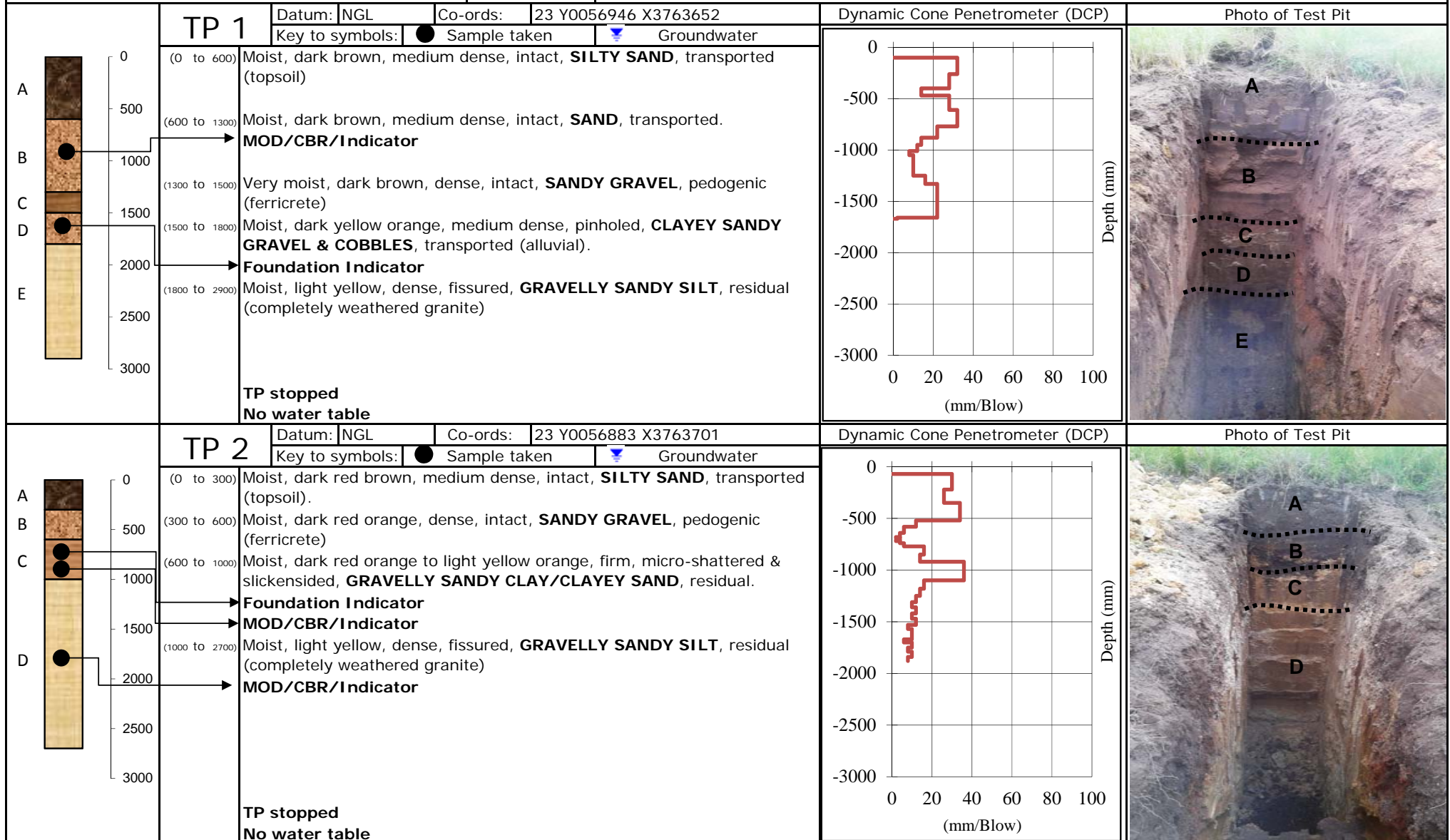
Test pit profiles



OUTENIQUA GEOTECHNICAL SERVICES

Geotechnical Soil Profile

Client:	Infrastructure Consulting Engineers
Project:	Portion 4 of Farm 208, Gwayang Filling Station
Area:	George
Date:	20.11.14
Excavator:	TLB



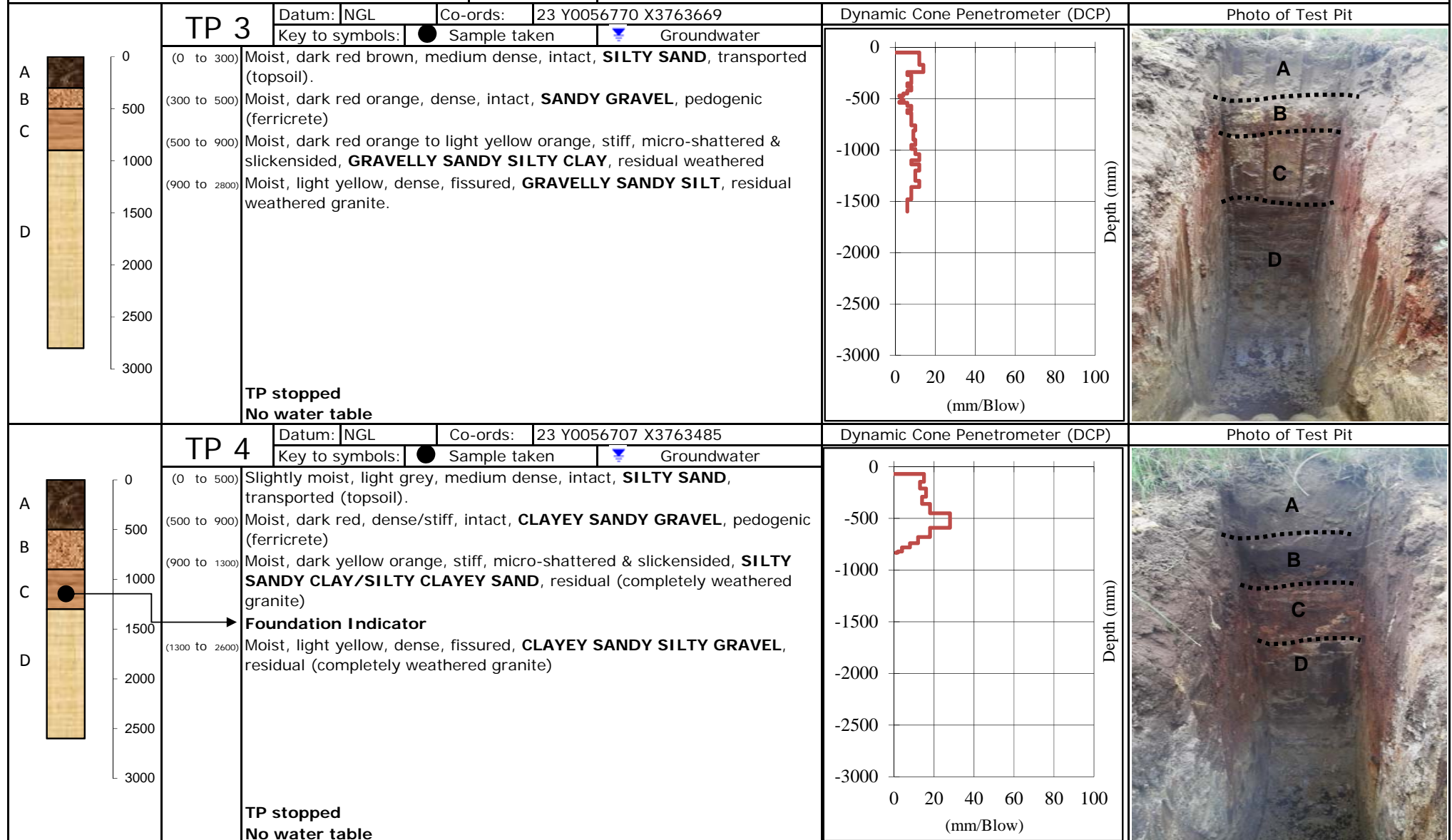


OUTENIQUA

GEOTECHNICAL SERVICES

Geotechnical Soil Profile

Client:	Infrastructure Consulting Engineers
Project:	Portion 4 of Farm 208, Gwayang Filling Station
Area:	George
Date:	20.11.14
Excavator:	TLB



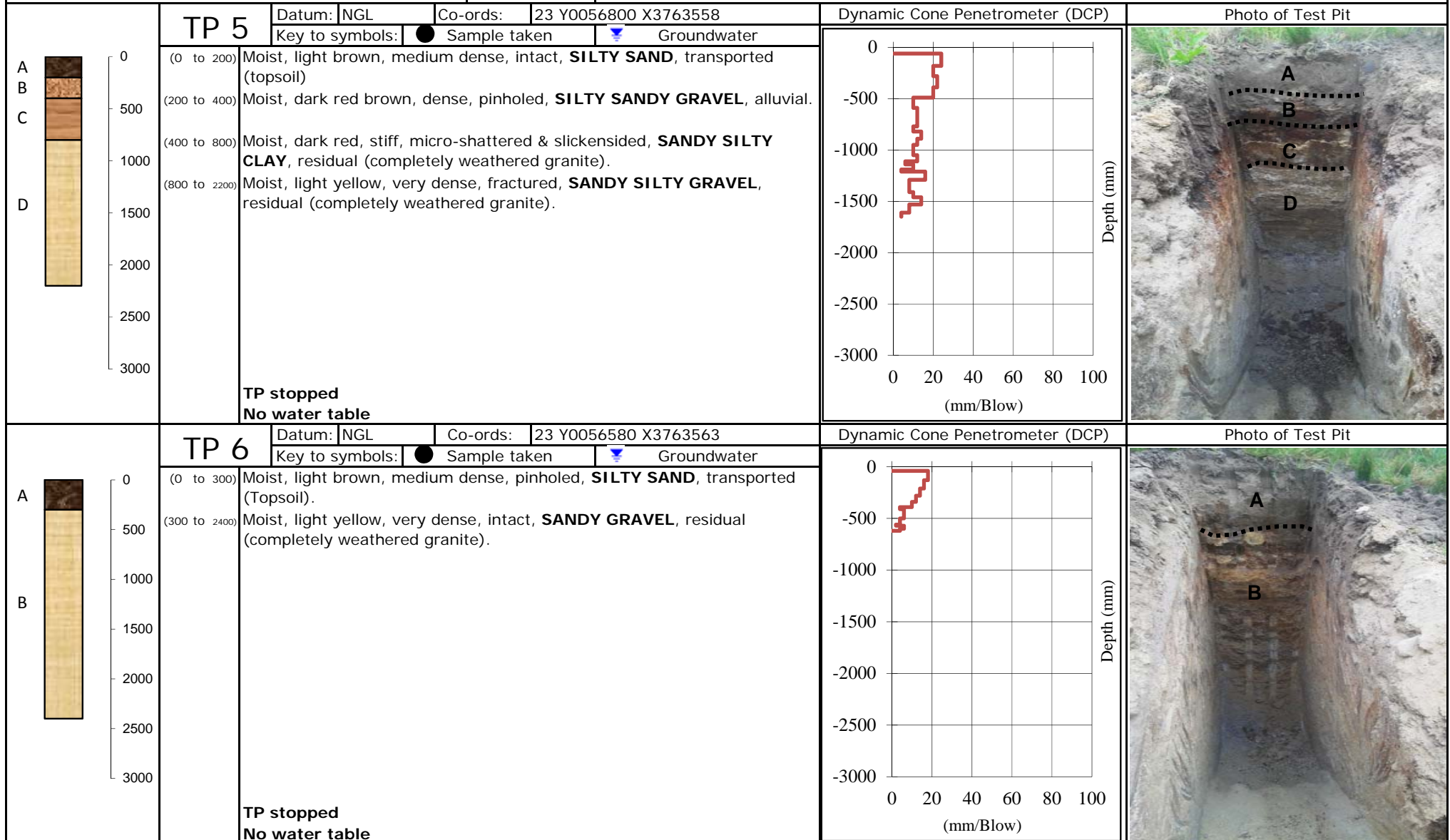


OUTENIQUA

GEOTECHNICAL SERVICES

Geotechnical Soil Profile

Client:	Infrastructure Consulting Engineers
Project:	Portion 4 of Farm 208, Gwayang Filling Station
Area:	George
Date:	20.11.14
Excavator:	TLB



Appendix 3

Lab test data



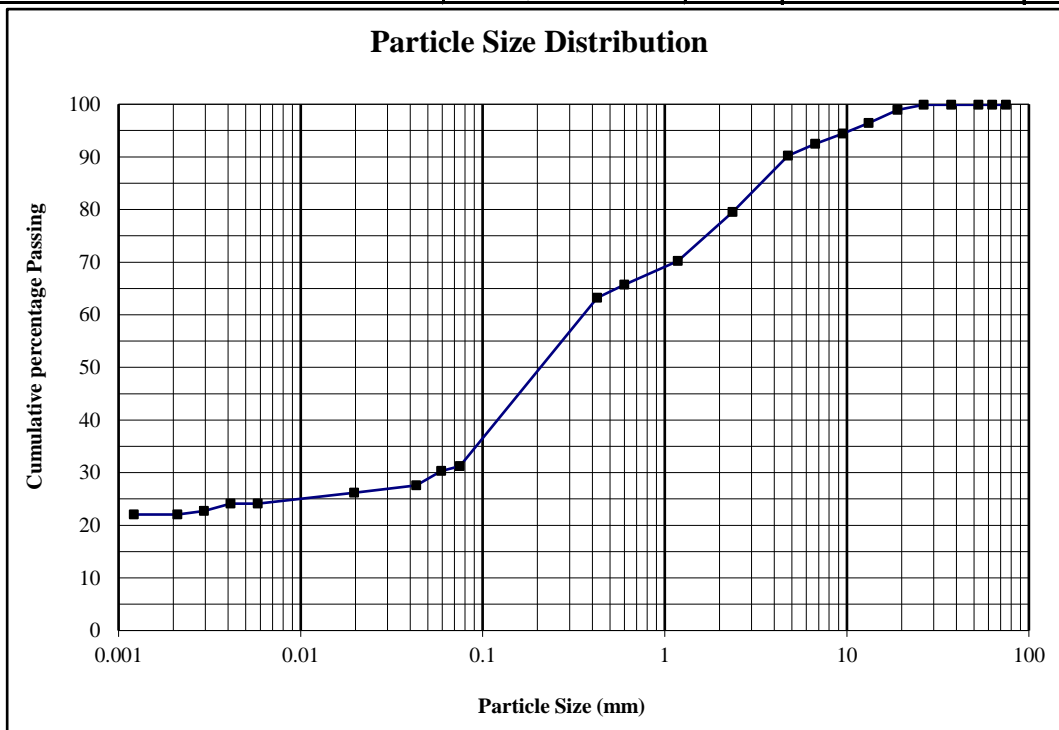
Customer :	Infrastructure Consulting Engineers	Project :	Portion 4 of Farm 208 Gwayang Station - George
	P O Box 186	Date Received :	22/11/17
	Persequear Park - Pretoria	Date Reported :	07/12/17
	0020	Req. Number :	3882/17
Attention :	De Bruyn Joubert	No. of Pages :	3/6

TEST REPORT

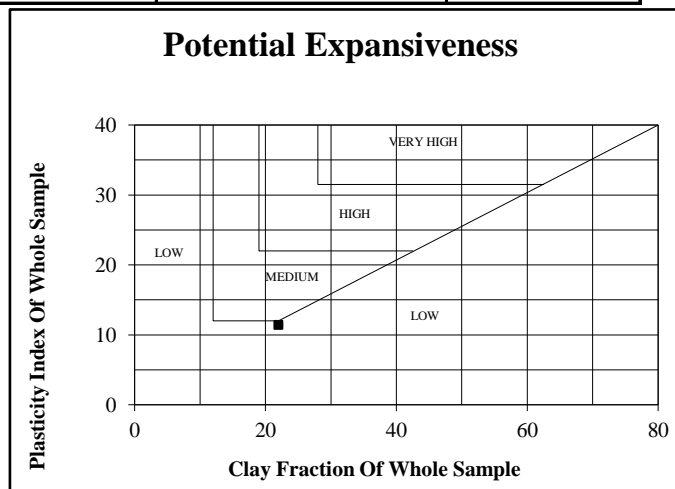
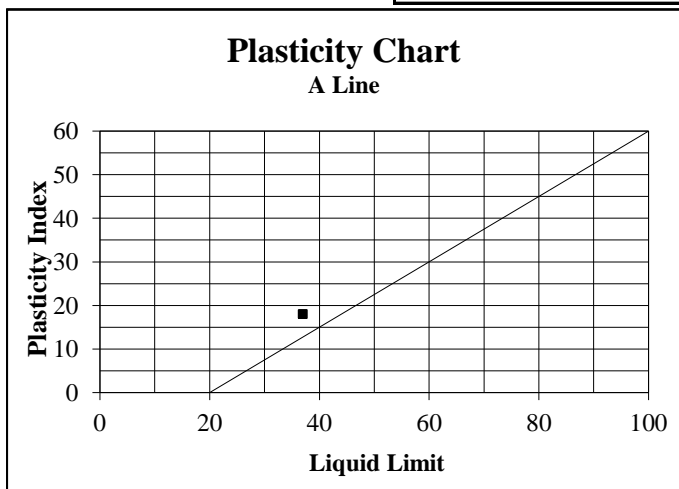
FOUNDATION INDICATOR - (TMH 1 Method A1(a),A2,A3,A4,A5) & (ASTM Method D422)

Material Description:	Dark Yellowish Orange Silty Clayey Gravelly Sand	Sample Number:	68473		
Position:	TP1 - Layer 4	Liquid Limit	37	Linear Shrinkage	9
Depth:	1500-1800	Plasticity Index	18	Insitu M/C%	16.6

Sieve Size(mm)	% Passing
75.0	100
63.0	100
53.0	100
37.5	100
26.5	100
19.0	99
13.2	96
9.5	94
6.7	93
4.75	90
2.36	80
1.18	70
0.600	66
0.425	63
0.075	31
0.0591	30
0.0432	28
0.0197	26
0.0058	24
0.0041	24
0.0030	23
0.0021	22
0.0012	22



% Clay	22	% Silt	11	% Sand	44	% Gravel	23
Unified Soil Classification		SC		PRA Soil Classification		A-2-6	



Notes:

- Specimens delivered to Outeniqua Lab in good order.

L. Heathcote (Director)
For Outeniqua Lab (Pty) Ltd.

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Materials Testing Laboratory

Registration No. 95/07742/07

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Dec-14

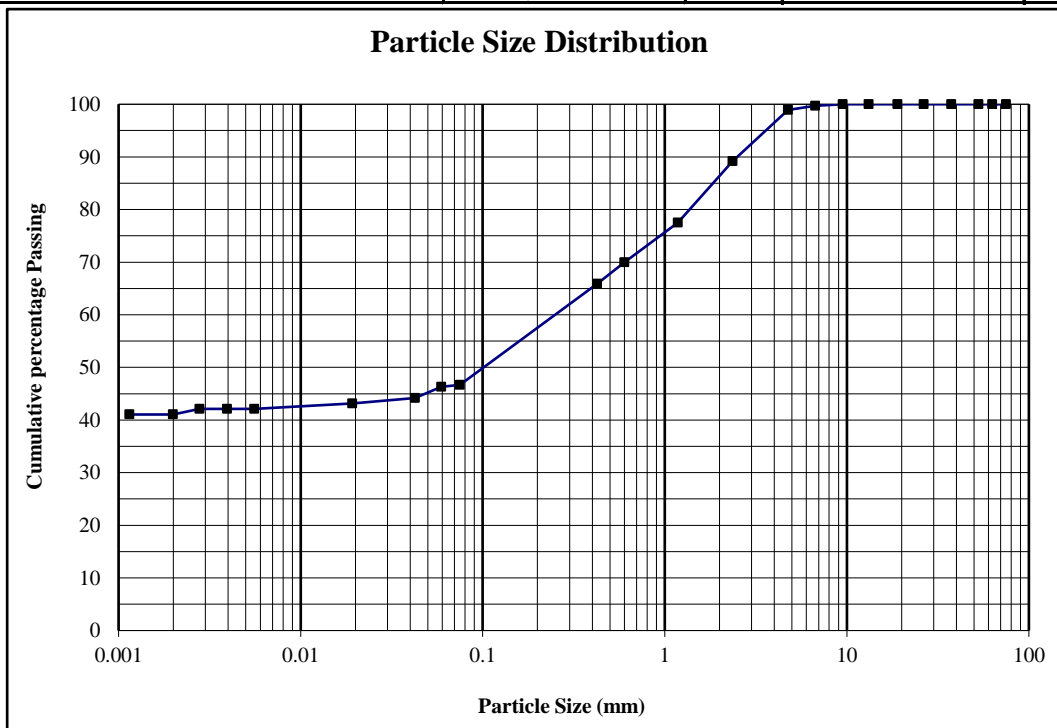
Customer :	Infrastructure Consulting Engineers	Project :	Portion 4 of Farm 208 Gwayang Station - George
	P O Box 186	Date Received :	22/11/17
	Persequare Park - Pretoria	Date Reported :	07/12/17
	0020	Req. Number :	3882/17
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TEST REPORT

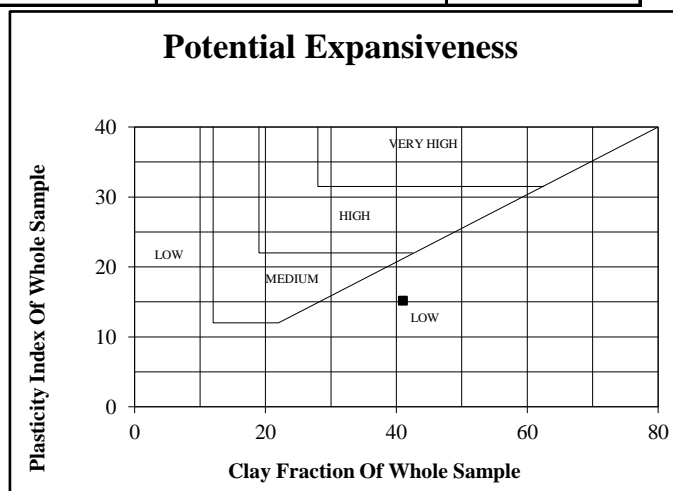
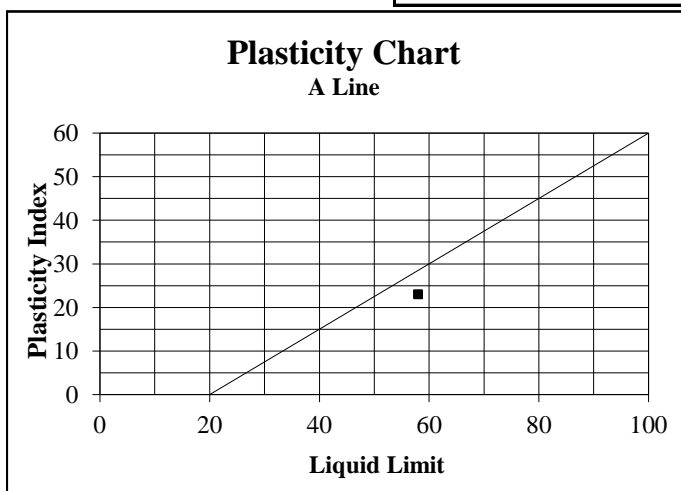
FOUNDATION INDICATOR - (TMH 1 Method A1(a),A2,A3,A4,A5) & (ASTM Method D422)

Material Description:	Dark Reddish Orange to Light Yellowish Orange Gravelly Sandy Clay	Sample Number:	68474		
Position:	TP2 - Layer 3	Liquid Limit	58	Linear Shrinkage	12
Depth:	600-1000	Plasticity Index	23	Insitu M/C%	29

Sieve Size(mm)	% Passing
75.0	100
63.0	100
53.0	100
37.5	100
26.5	100
19.0	100
13.2	100
9.5	100
6.7	100
4.75	99
2.36	89
1.18	78
0.600	70
0.425	66
0.075	47
0.0591	46
0.0425	44
0.0192	43
0.0056	42
0.0039	42
0.0028	42
0.0020	41
0.0011	41



% Clay	41	% Silt	7	% Sand	38	% Gravel	14
Unified Soil Classification	SM		PRA Soil Classification	A-7-5			



Notes:

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Directors/Direkteure: D McDonald Reg. Eng. Tech (Managing/Bestuurende) L Heathcote B-Tech. Civil Miss A Govender



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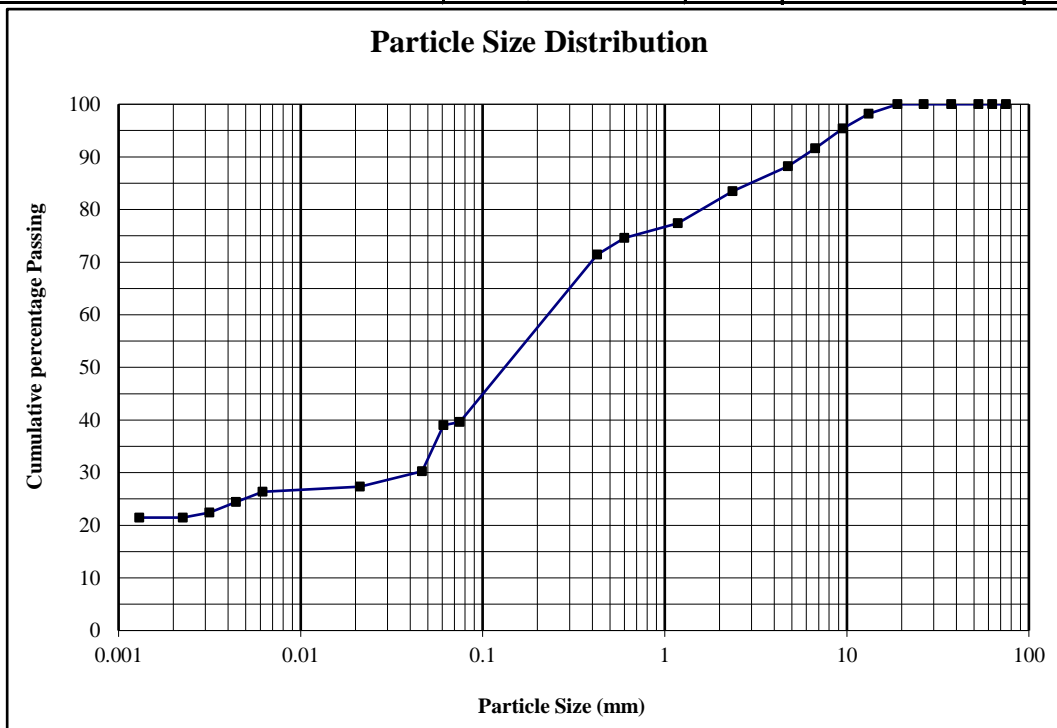
Customer :	Infrastructure Consulting Engineers	Project :	Portion 4 of Farm 208 Gwayang Station - George
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	Persequare Park - Pretoria	Date Reported :	07/12/17
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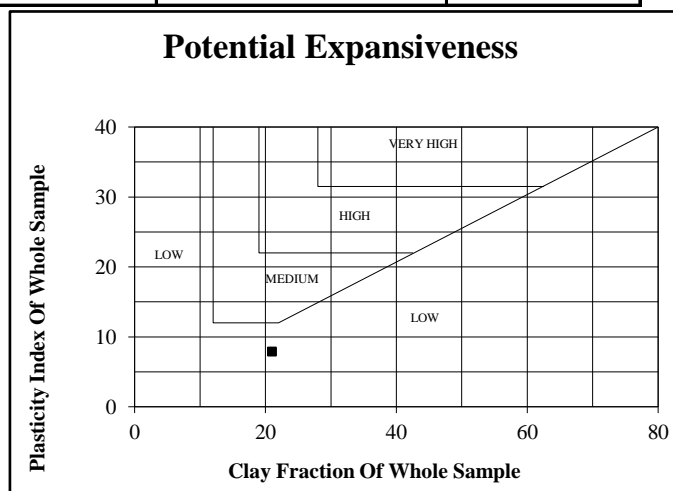
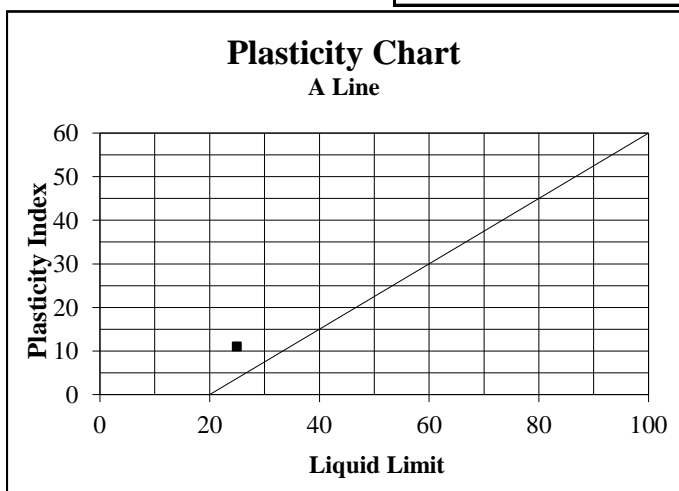
FOUNDATION INDICATOR - (TMH 1 Method A1(a),A2,A3,A4,A5) & (ASTM Method D422)

Material Description:	Dark Yellowish Orange Gravelly Clayey Silty Sand	Sample Number:	68477		
Position:	TP4 - Layer 3	Liquid Limit	25	Linear Shrinkage	6
Depth:	900-1300	Plasticity Index	11	Insitu M/C%	8.8

Sieve Size(mm)	% Passing
75.0	100
63.0	100
53.0	100
37.5	100
26.5	100
19.0	100
13.2	98
9.5	95
6.7	92
4.75	88
2.36	84
1.18	77
0.600	75
0.425	71
0.075	40
0.0610	39
0.0464	30
0.0212	27
0.0062	26
0.0044	24
0.0032	22
0.0023	21
0.0013	21



% Clay	21	% Silt	26	% Sand	35	% Gravel	18
Unified Soil Classification		SC		PRA Soil Classification		A-6	



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Potential Heave Calculations - Van der Merwe Method

Site: Gwayang, George

TP no: 2

From (Depth in mm)	To (Depth in mm)	Depth from (ft)	Depth to (ft)	Depth factor	Potential Expansiveness	Total Heave (in)	Heave (mm)	NHBRC Cat
0	300	0	1	0.943	0	0.0	0.00	
300	600	1	2	0.824	0	0.0	0.00	
600	1000	2	3	0.75	0.25	0.2	4.76	
1000	2700	3	9	3.066	0	0.0	0.00	
						0.2	4.76	H

Potential Expansiveness		Inches
Very High		1
High-Very High		0.75
High		0.5
Medium		0.25
Low		0



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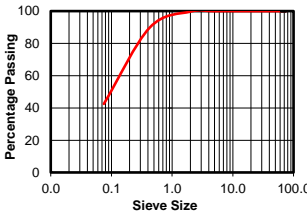
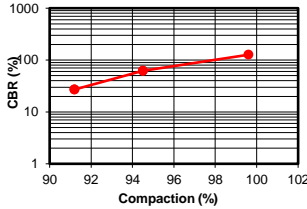
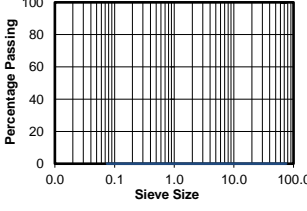
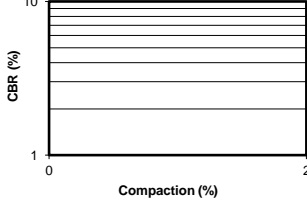
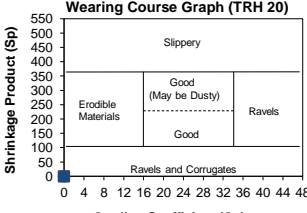


T0347

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Attention :	0020	Req. Number :	3882/17
	De Bruyn Joubert	No. of Pages :	1/6

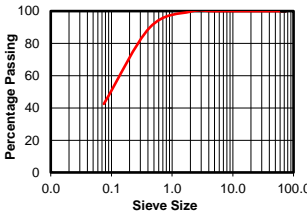
TEST REPORT

CALIFORNIA BEARING RATIO - (TMH 1 Method A1(a),A2,A3,A4,A5,A7,A8)

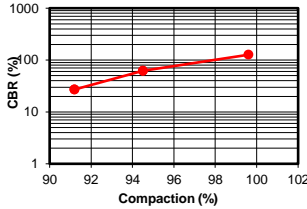
Material Indicators							68472
Sample Position (SV)		TP1 - Layer 2	TRH 14: G8 SSG				
Depth (mm)		600-1300					
Sample No		68472					
Materials Description	Source Colour Soil Type Classification	In-Situ Dark Brown Sand Existing					
Max. Stone size in hole (mm)							
Percentage Passing	75.0mm	100	Opinion				
	63.0mm	100					
	53.0mm	100					
	37.5mm	100					
	26.5mm	100					
	19.0mm	100					
	13.2mm	100					
	4.75mm	100					
	2.00mm	100					
	0.425mm	90					
0.075mm	42.5						
Soil Mortar & Constants							
Grading Modulus		0.68					
Coarse Sand (%)		10					
Fine Sand (%)		47					
Silt & Clay (%)		43					
Liquid Limit (%)		NP					
Plasticity Index (%)		NP					
Linear Shrinkage (%)		0.0					
CBR / Density Relationship							
MOD	Max Dry Density (kg/m³)	2088					
	Opt Moisture Content (%)	6.6					
	Mould Moisture Con. (%)	6.3					
	@100% Mod AASHTO	99.6					
	Swell (%)	0.00	≤ 1.5	✓			
NRB	100% NRB	94.5					
	Swell (%)	0.00					
	100% Proctor	91.2					
CBR	Swell (%)	0.00					
	@ 100% Mod AASHTO	127					
	@ 98% Mod AASHTO	96					
	@ 95% Mod AASHTO	63					
	@ 93% Mod AASHTO	38					
	@ 90% Mod AASHTO	18	≥ 10	✓			
Insitu Moisture Content (%)							
Soil Classification Achieved By The Material							
TRH 14:		G8 SSG					
AASHTO System		A-4					
Unified System		SM					

68472

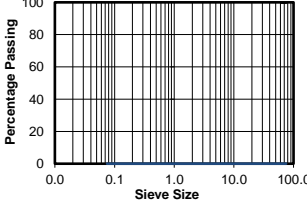
Sieve Analysis



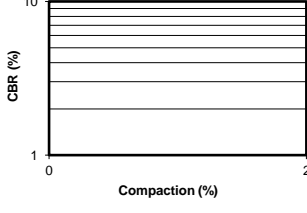
CBR Chart



Sieve Analysis

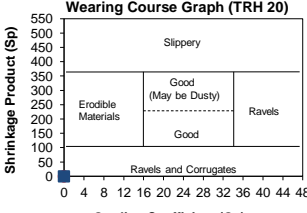


CBR Chart



68472

Wearing Course Graph (TRH 20)



Specimens delivered to Outeniqua Lab in good order.

Llewelyn Heathcote
Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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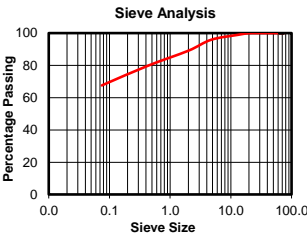
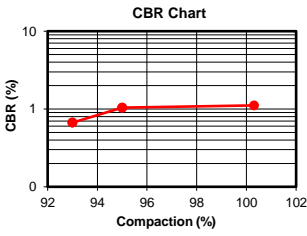
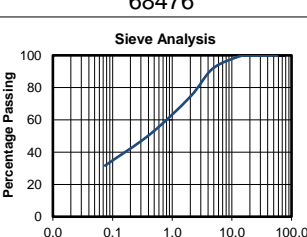
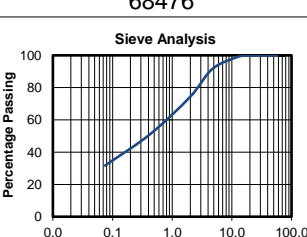
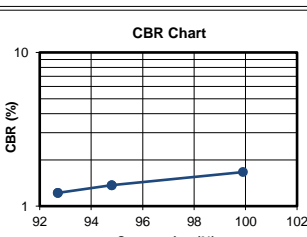
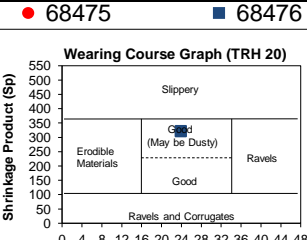


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	De Bruyn Joubert	No. of Pages :	2/6

TEST REPORT

CALIFORNIA BEARING RATIO - (TMH 1 Method A1(a),A2,A3,A4,A5,A7,A8)

Material Indicators							68475	
Sample Position (SV)		TP2 - Layer 3	TRH 14: Not Classified	TP2 - Layer 4	TRH 14: Not Classified			
Depth (mm)		600-1000		1000-2700				
Sample No		68475		68476				
Materials Description	Source	In-Situ		In-Situ				
	Colour	Dark Reddish Orange to Light Yellow Orange		Light Yellow				
	Soil Type	Gravelly Sandy Silty Clay		Gravelly Sandy Silt				
	Classification	Existing		Existing				
Max. Stone size in hole (mm)			Opinion		Opinion			
Percentage Passing	75.0mm	100		100				
	63.0mm	100		100				
	53.0mm	100		100				
	37.5mm	100		100				
	26.5mm	100		100				
	19.0mm	100		100				
	13.2mm	99		99				
	4.75mm	96		92				
	2.00mm	89		74				
	0.425mm	80		51				
	0.075mm	67.6		31.7				
Soil Mortar & Constants							68476	
Grading Modulus		0.64		1.43				
Coarse Sand (%)		11		31				
Fine Sand (%)		14		26				
Silt & Clay (%)		76		43				
Liquid Limit (%)		62		38				
Plasticity Index (%)		25		13				
Linear Shrinkage (%)		12.0		6.0				
CBR / Density Relationship								
MOD	Max Dry Density (kg/m³)	1724		1989				
	Opt Moisture Content (%)	19.1		7.0				
	Mould Moisture Con. (%)	18.7		6.7				
	@100% Mod AASHTO	100.3		100.0				
	Swell (%)	7.34		4.66				
NRB	100% NRB	95.0		94.8				
	Swell (%)	8.39		5.72				
Proc	100% Proctor	93.0		92.7				
	Swell (%)	10.34		6.94				
CBR	@ 100% Mod AASHTO	1		2				
	@ 98% Mod AASHTO	1		2				
	@ 95% Mod AASHTO	1		1				
	@ 93% Mod AASHTO	1		1				
	@ 90% Mod AASHTO	0		1				
Insitu Moisture Content (%)						<div>● 68475 ■ 68476</div> 		
Soil Classification Achieved By The Material								
TRH 14:		Not Classified		Not Classified				
AASHTO System		A-7-5		A-2-6				
Unified System		MH		SM				

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Technical Signatory
For Outeniqua Lab (Pty) Ltd.

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Appendix 4

DCP test data



Outeniqua Geotechnical Services cc.

R-DCP-1-5

Dec-14

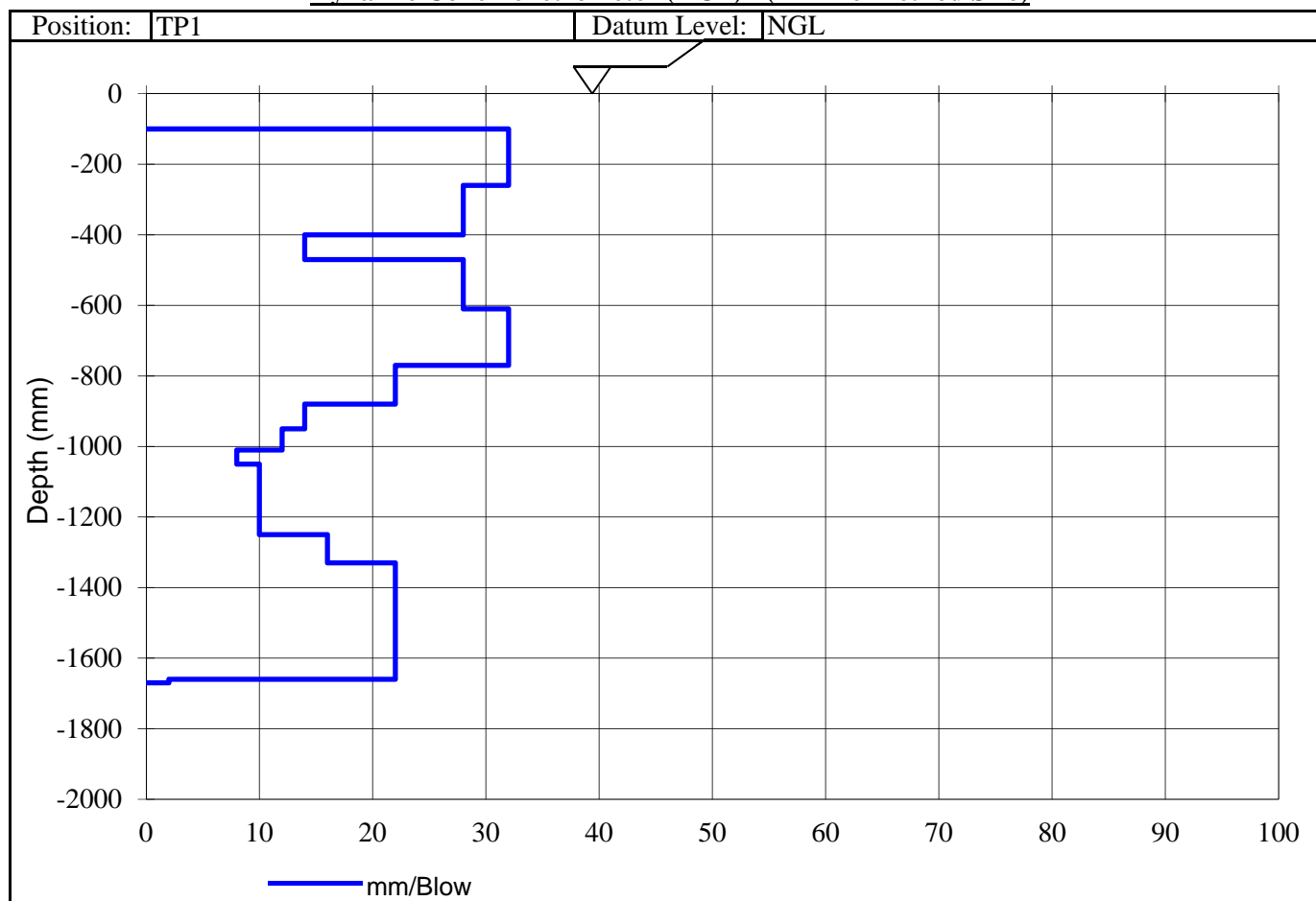
Geotechnical Engineering Consultants

Registration No. 1999/062743/23

18 Clyde Street, Knysna : PO Box 964, Knysna, 6570

Tel: 044 3820502 : Fax: 044 3820503 : e-mail: iain@outeniqualab.co.za

Customer :	Infrastructure Consulting Engineers P.O. Box 186 Perseus Park, Pretoria 0020	Project :	Portion 4 of Farm 208 Gwayana Filling Station, George
		Date Received :	06.11.17
		Date Reported :	20.11.17
		Req. Number :	
Attention :	De Bruyn Joubert	No. of Pages :	1 of 6

TEST REPORT**Dynamic Cone Penetrometer (DCP) - (TMH 6 Method ST6)**

I Paton (Member)
For Outeniqua Geotech. Services cc.
Technical Signatory

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Members: Iain Paton BSc Hons MEng Pr Sci Nat MSAIEG MSAICE



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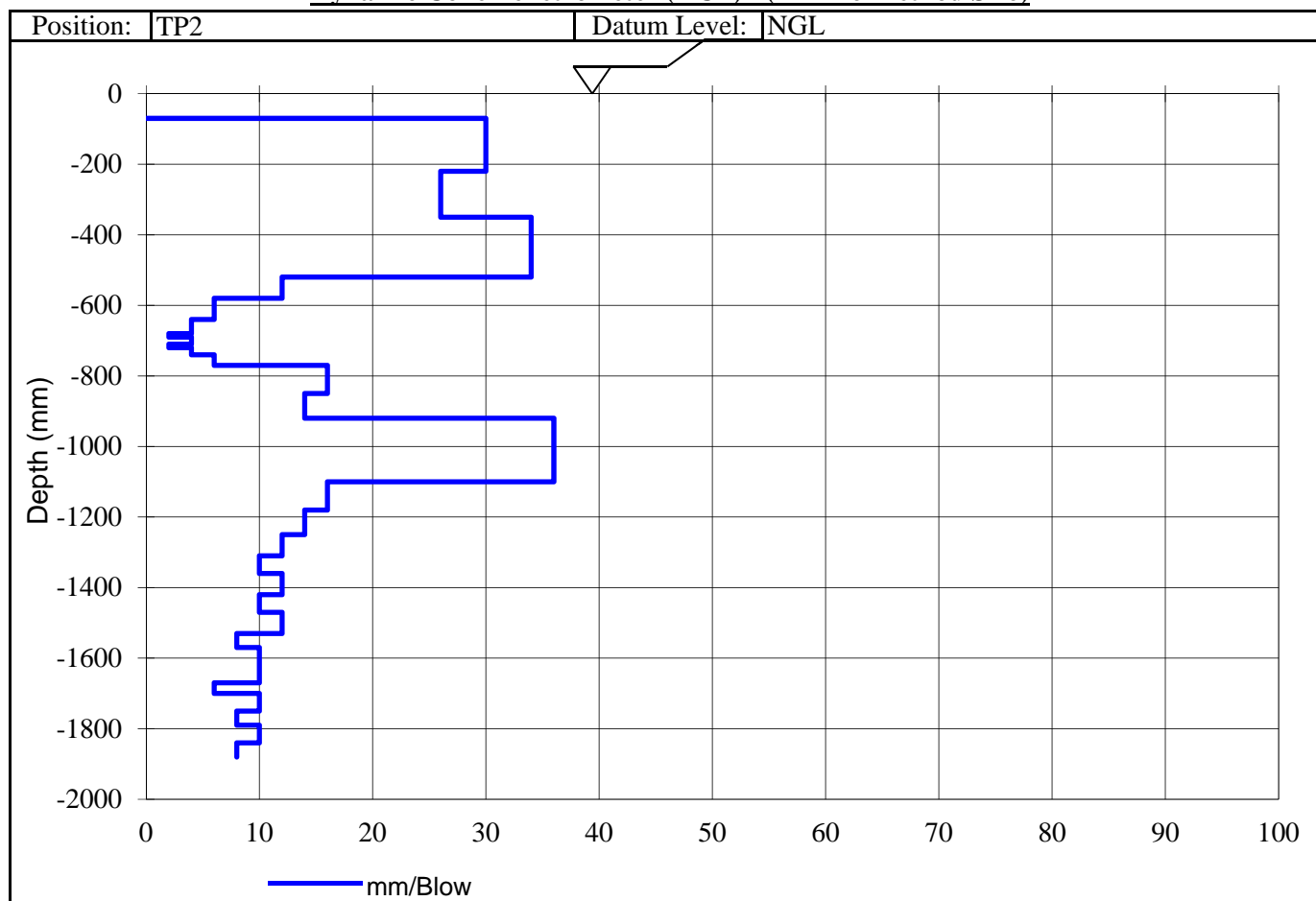
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Tel: 044 3820502 : Fax: 044 3820503 : e-mail: iain@outeniqualab.co.za

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		Date Reported :	20.11.17
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TEST REPORT

Dynamic Cone Penetrometer (DCP) - (TMH 6 Method ST6)



I Paton (Member)
For Outeniqua Geotech. Services cc.
Technical Signatory

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Members: Iain Paton BSc Hons MEng Pr Sci Nat MSAIEG MSAICE



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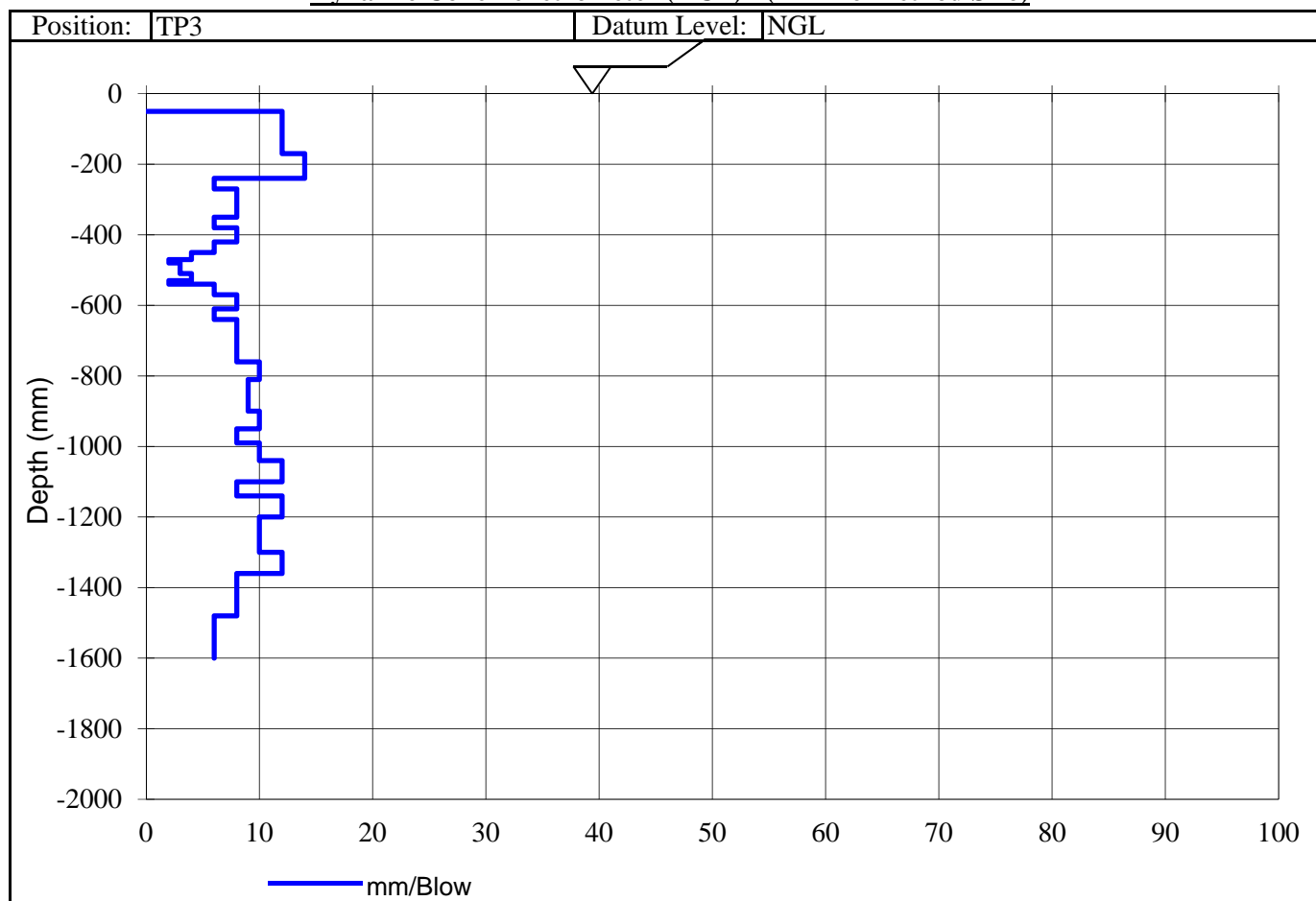
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Attention :	De Bruyn Joubert	No. of Pages :	3 of 6

TEST REPORT

Dynamic Cone Penetrometer (DCP) - (TMH 6 Method ST6)



I Paton (Member)
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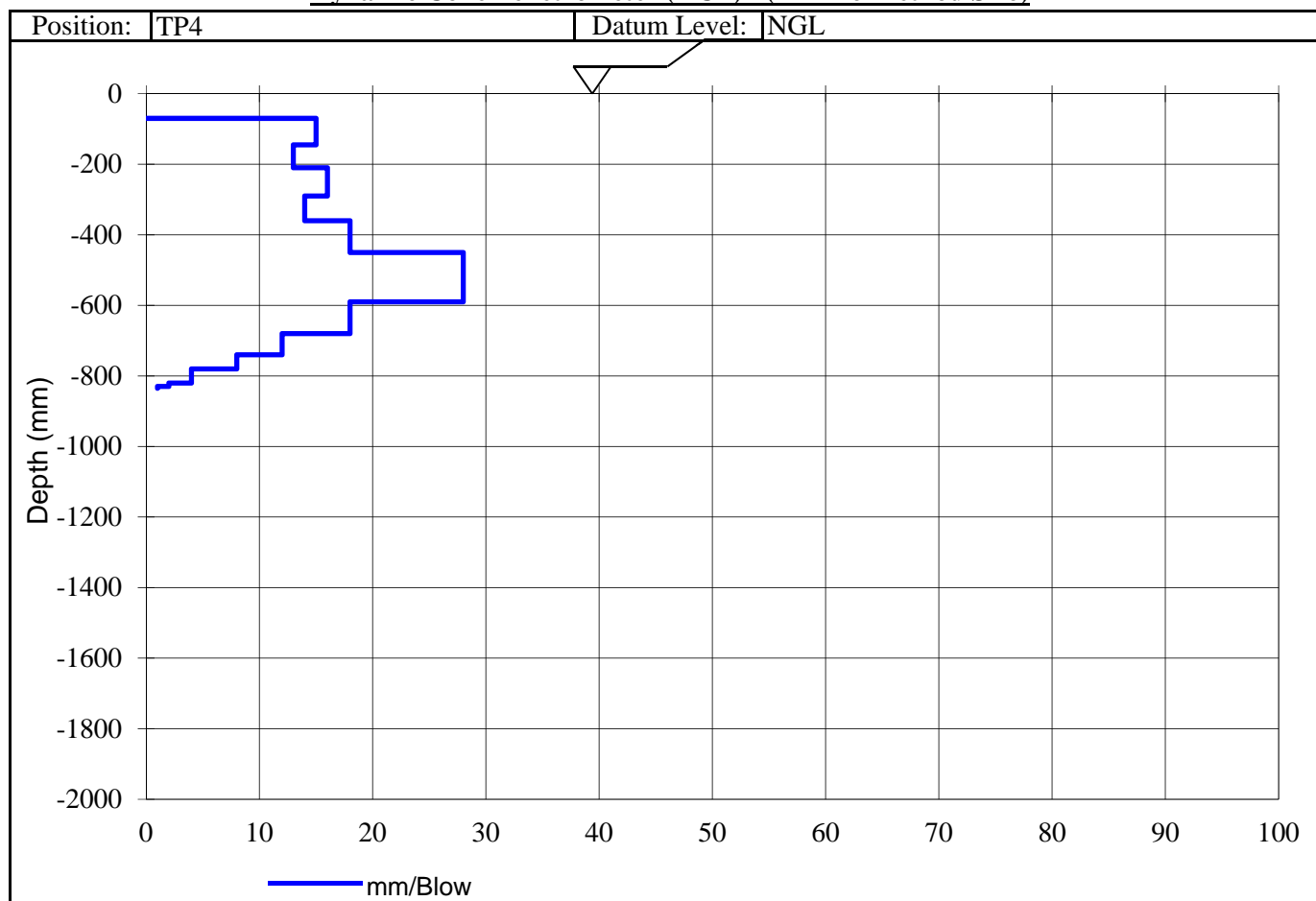
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Customer :	Infrastructure Consulting Engineers P.O. Box 186 Perseus Park, Pretoria 0020	Project :	Portion 4 of Farm 208 Gwayana Filling Station, George
		Date Received :	06.11.17
		Date Reported :	20.11.17
		Req. Number :	
Attention :	De Bruyn Joubert	No. of Pages :	4 of 6

TEST REPORT

Dynamic Cone Penetrometer (DCP) - (TMH 6 Method ST6)



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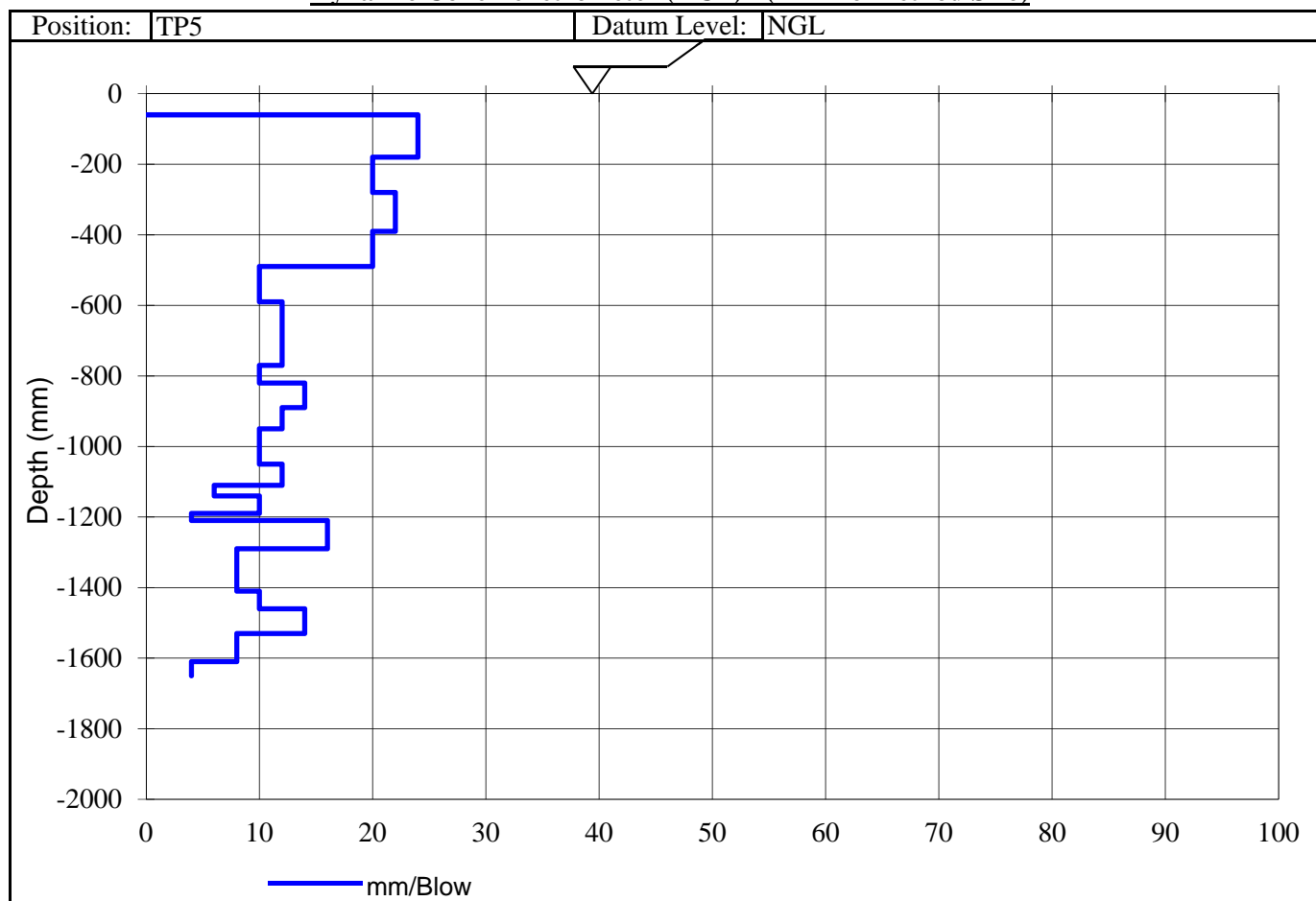
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Dynamic Cone Penetrometer (DCP) - (TMH 6 Method ST6)



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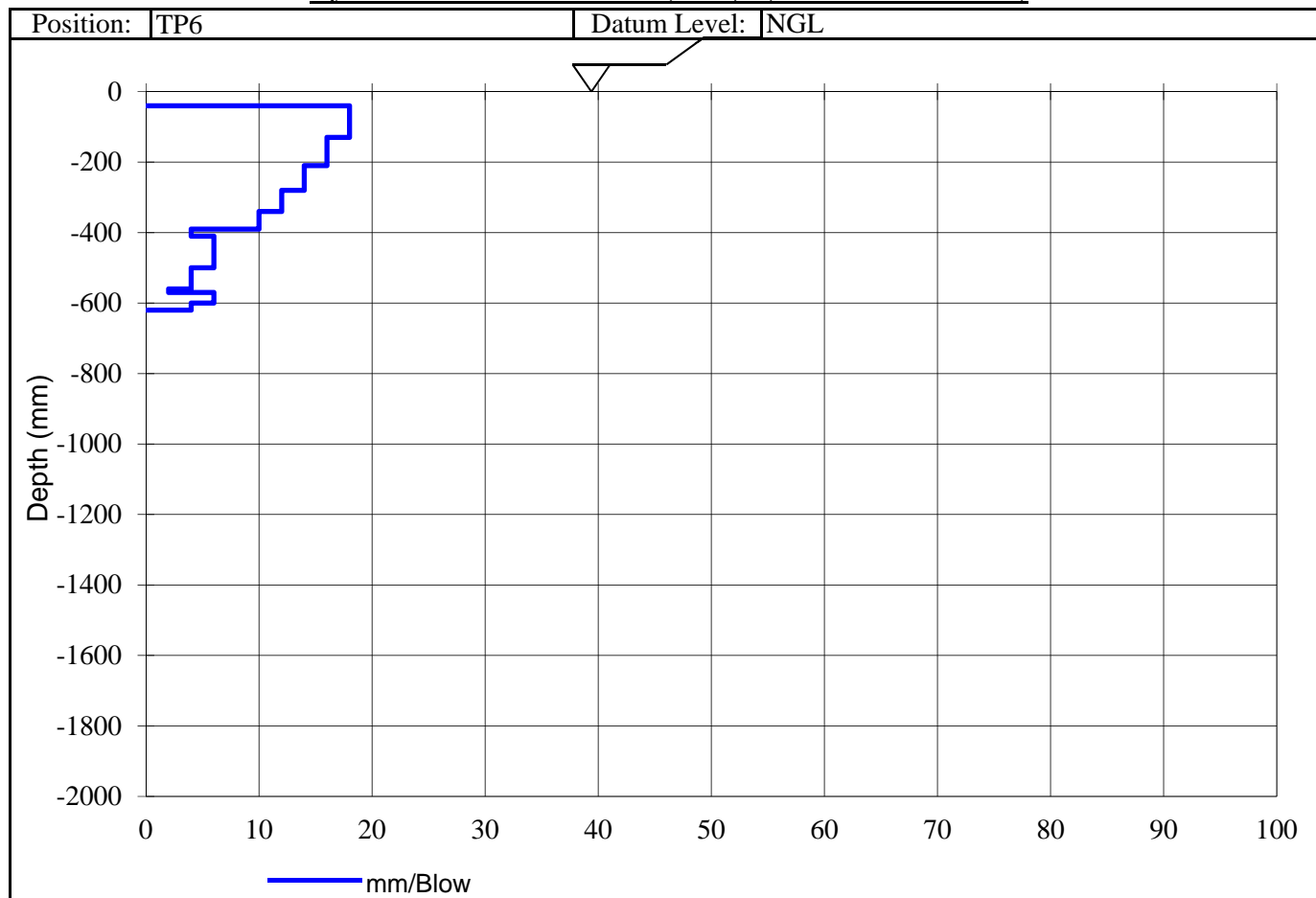
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TEST REPORT

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Members: Iain Paton BSc Hons MEng Pr Sci Nat MSAIEG MSAICE

**PROPOSED DEVELOPMENT OF A SERVICE STATION ON A PORTION OF PORTION 4
OF THE FARM GWAYANG (NO 208) AT THE MAIN ACCESS INTERSECTION OF THE
GEORGE AIRPORT**

SOCIAL IMPACT ASSESSMENT

Prepared by:

Dr AH de Wit

OCTOBER 2017

EXECUTIVE SUMMARY

The purpose of this Social Impact Assessment was to identify and assess the social impacts associated with the proposed development of a Service Station on a portion of Portion 4 of the Farm Gwayang (No 208), along the R404 route at the intersection that provides access to the George Airport.

The proposed Service Station is likely to exert much of its social influence at the local level, *i.e.* in the George Municipality. This area has witnessed a depressed economic outlook in recent times, with zero employment growth. The latter does not bode well for the plight of the town's poor and unemployed inhabitants. However, George has access to several strategic resources that count in its favour from the perspective of economic development. This includes well-developed commercial, financial and social infrastructure; quality conference facilities, businesses and retail services; extraordinary bio-physical and marine resources; and a growing regional tourism sector and major transport systems, including the N2 National Road and the George Airport.

To identify and assess the social impacts of the proposed Service Station, the research results were filtered through a range of possible social change processes and SIA categories. The following categories and social impacts were subsequently identified:

Socio-economic impacts:

- The construction phase of the proposed Service Station will see the creation of temporary (short-term) employment opportunities. This will culminate in a positive social impact in the form of increased economic activity, poverty alleviation and favourable socio-economic

implications (such as improved access to and consumption of goods and services, greater freedom of choice, better quality of life, and so on) for the affected individuals and their dependants.

- The operational phase of the proposed Service Station will result in the creation of long-term permanent employment opportunities. This will also lead to a considerable social impact in the form of increased economic activity, poverty alleviation and favourable socio-economic implications (such as improved access to and consumption of goods and services, greater freedom of choice, better quality of life, and so on) for the affected individuals and their dependants.

Empowerment impacts:

- The construction phase of the proposed Service Station could see the development and transfer of skills taking place in order to meet the necessary labour requirements. This will have a socio-economic importance that extends well beyond the period of the proposed development's construction phase. Relevant individuals will be able to sell their newly acquired skills within and beyond the boundaries of the local economy long after the completion of the construction phase.
- The operational phase of the proposed Service Station could also see the development and transfer of skills taking place in order to meet the necessary labour requirements. Skills development and transfer will grant the formerly unskilled and/or unemployed access to permanent employment and associated benefits. This will have positive socio-economic implications for the individuals involved as well as their dependants.

Public health and safety impacts:

- The proposed Service Station is likely to generate an increased amount of traffic as far as the daily movement of its workforce and other construction related vehicular traffic is concerned. This could culminate in health and safety impacts through the potential increase in motor vehicle and pedestrian related accidents. Relevant mitigation in this case however would decrease the impact significance dramatically.

Other construction and operational phase impacts

- The proposed Service Station, during both the construction as well as the operational phase, will make a positive contribution to the Gross Geographic Product (GGP) of the George Municipality. The demand for goods and services during both phases will also have a positive impact on the local economy.
- The proposed Service Station will represent a contribution to Local Economic Development, particularly around the George Airport. Here it would be strategically well situated to provide an essential supporting service to the tourism sector as well as a future industrial node in proximity to the N2 National Road and the George Airport.

Project feasibility

The feasibility of the proposed Service Station was investigated via three important elements, *i.e.* the Need and Desirability for the proposed development; its financial feasibility; and potential Service Station developments on alternative sites. It was subsequently concluded that:

- There is a positive Need and Desirability for the proposed Service Station;
- Its financial feasibility is confirmed; and
- The proposed site for this development is the only viable site.

The proposed Service Station would as a result be a feasible development and the (mostly positive) social impacts associated with it, certain to happen.

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LIST OF ABBREVIATIONS

ACSA	Airports Company of South Africa
EIA	Environmental Impact Assessment
GGP	Gross Geographic Product
SIA	Social Impact Assessment

1. INTRODUCTION

The proposed development of any service station, by virtue of the on-site handling, storage and trading of petroleum products, naturally requires careful consideration from an environmental impact point of view. The socio-economic impacts of such developments are equally, if not more deserving in light of the '*environment right*' of all South Africans, which basically determines that everyone is entitled to an environment that is not harmful to their health or wellbeing.¹ It also goes without saying that in its capacity as dynamic business developments, service stations form an essential component of road transport systems. In the interest of local and regional logistics as well as economic sustainability, these developments are therefore frequently subject to questions of feasibility, and often in addition to this, questions of need and desirability. Against the background of these introductory statements, the following two subsections set the stage for the Social Impact Assessment (SIA) of the proposed development of a Service Station at the intersection that provides access to the George Airport. Facts on the location and basic characteristics of the proposed development are firstly presented, followed by the scope of the ensuing SIA.

1.1 Project location and description

The development of a new Service Station is proposed on a portion of Portion 4 of the Farm Gwayang (No 208), along the R404 route at the intersection that provides access to the George Airport. Figure 1 shows the location of the site of this proposed development in a broader local context. Figure 2 shows the site of this proposed development relative to the George Airport and

¹ See the analysis of S24 of the Bill of Rights of the South African Constitution (Act 108 of 1996) in Currie & de Waal (2008) for example, as well as the National Environmental Management Principles (Chapter 1, Principle 2 and 3) of the National Environmental Management Act (Act 107 of 1998) (South Africa, 2017).

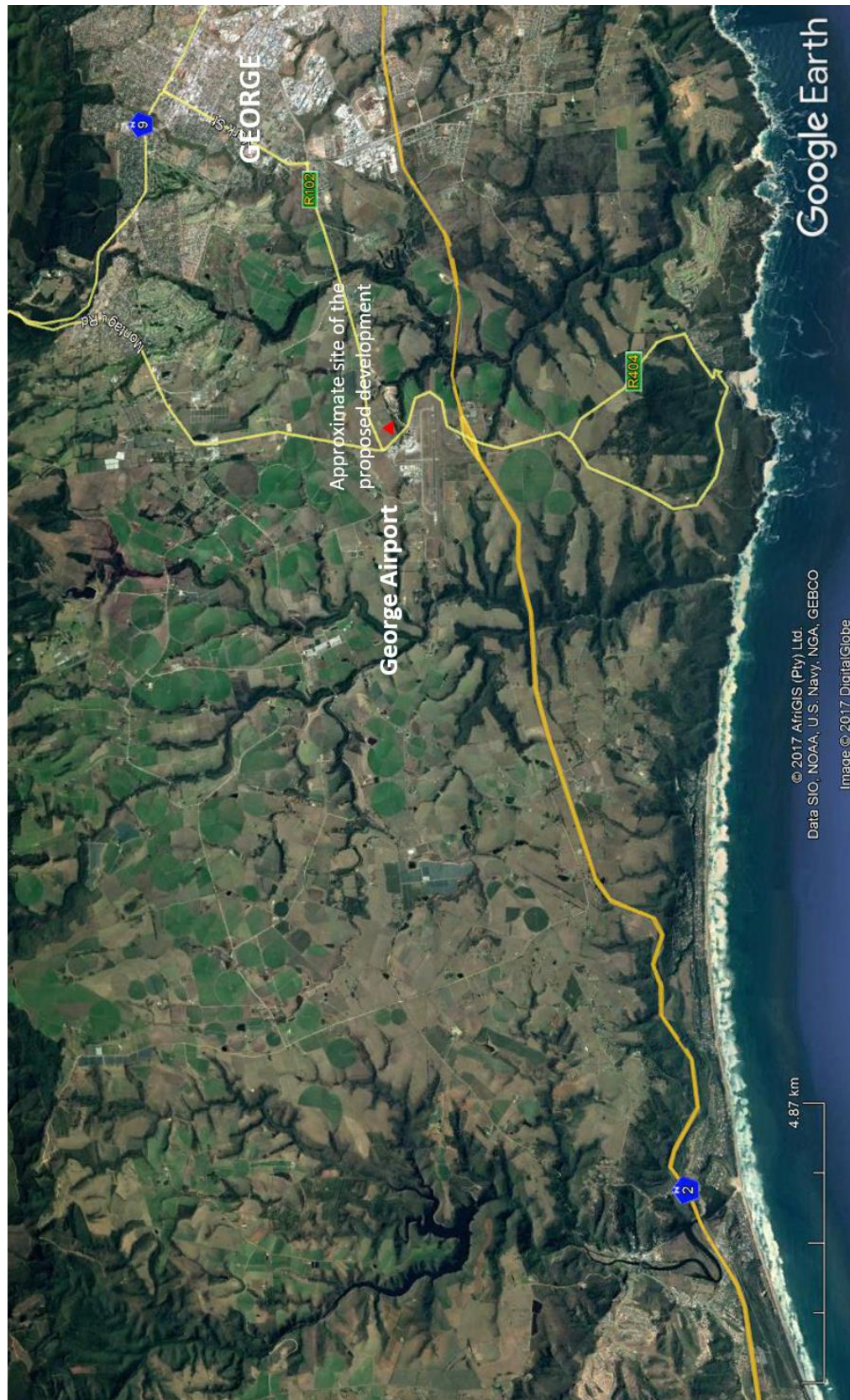


Figure 1: The location of the proposed development in a broader local context

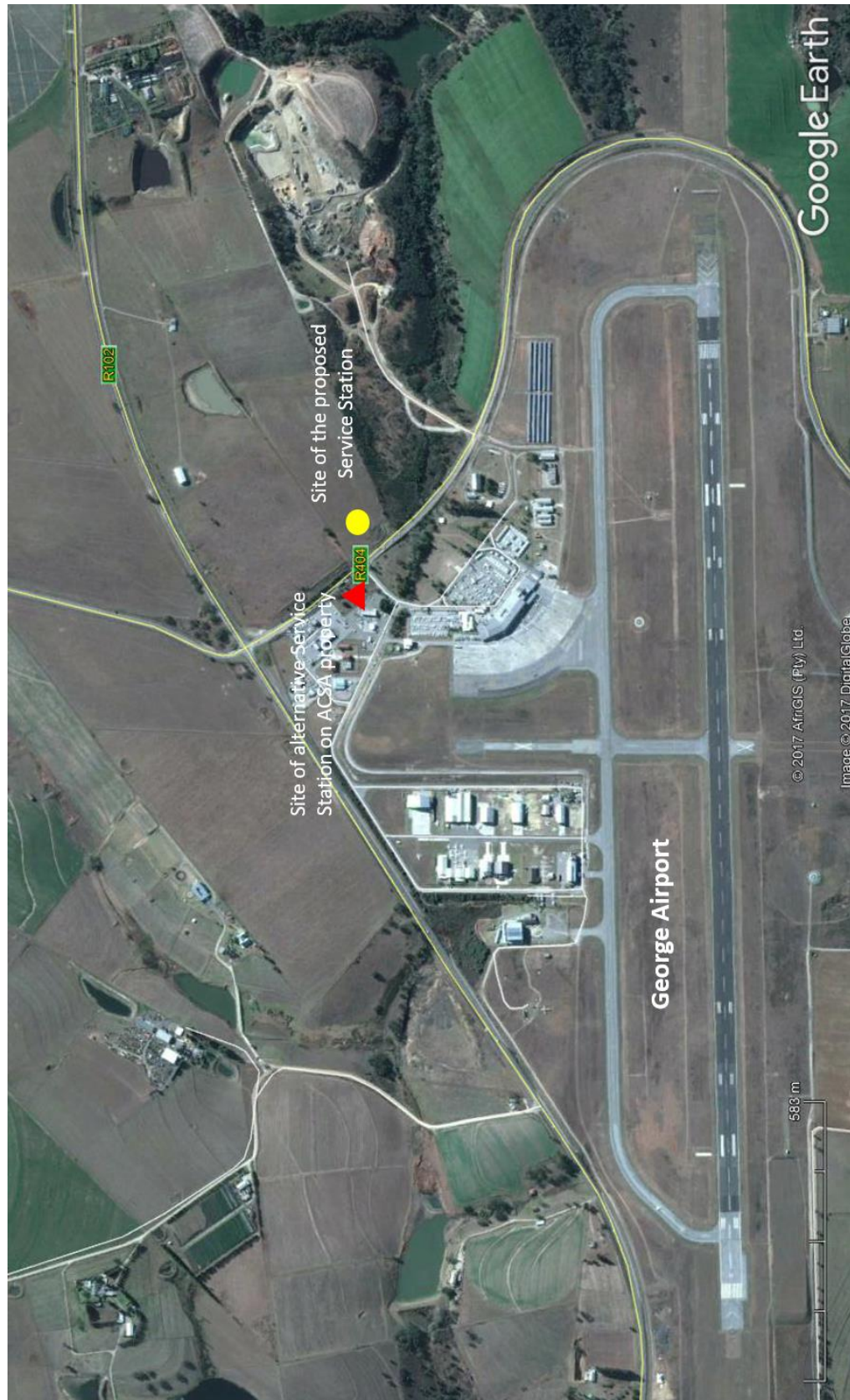


Figure 2: The location of the proposed development relative to the George Airport

the R404 road in more detail (Consult Marike Vreken, 2017 for a detailed locality map). Also indicated on this image is the location of one of the alternative Service Station sites. This will be referred to in Section 3.4 D where the feasibility of the proposed Service Station is discussed.

In South Africa, the Service Station concept evolved over the last three decades into a multifaceted type of land-use that contains a diverse mix of physical attributes, activities and services. The 'average' Service Station so to speak would as a result reflect a collection of some of the following characteristics, namely:

- Facilities that are related to the reception, storage and (retail) dispensing of petroleum products to light and heavy vehicles (diesel, petrol, liquid petroleum gas, lubricants, *etc.*);
- Facilities that are related to the short-term maintenance of motor vehicles (inspection and adjustment of tyre pressure, cleaning of vehicle windshields, washing of motor vehicles, *etc.*);
- Vehicle repair facilities;
- Fast food restaurants and fast food take-away services;
- Convenience stores and/or other relatively small retail outlets;
- Tourism information centres; and
- Ablution facilities.

In view of these characteristics, the proposed Service Station development in the case of this SIA has a familiar conceptual design and as such is made up of the following (See Joubert, 2017a):

- A service station with four dispenser islands for light vehicles and one dispenser island for heavy vehicles;
- A convenience store;
- Take away food with limited seating;
- Restrooms (ablution facilities); and
- An information centre.

Since the proposed development is essentially a Greenfield Development, it is relatively expensive. The estimated cost for the service station alone is R14 million. The installation of the fuel storage tanks and relevant pump will cost an estimated R3 million, while the access roads are expected to cost a further R3m (Joubert, 2017b).

1.2 SIA scope

This SIA includes the following key components that are generally agreed upon for the study, assessment and reporting of social impacts (See Vanclay *et al.*, 2015):

- A baseline description of the affected social environment in order to comprehend and contextualise relevant issues and impacts;
- The identification and assessment of the potential socio-economic impacts of the proposed Service Station in its construction and operational phases;
- Recommendations regarding the mitigation of the identified social impacts (where applicable); and

- An assessment of the feasibility of the proposed development (on which the realisation of social impacts naturally depend).

The study approach of the SIA appears in **Addendum A** at the end of this report. This includes the methodological foundation that informed the SIA and the research process that was followed in order to identify potential social impacts.

2. DESCRIPTION OF THE AFFECTED SOCIAL ENVIRONMENT

The proposed Service Station is likely to exert much of its social influence at the local level, *i.e.* within the boundaries of the George Municipality.

George is a so-called ‘secondary city’ in the Eden District Municipality of South Africa’s Western Cape Province. It is located towards the western extreme of what is popularly known as the country’s Garden Route. Following are some of the key contemporary attributes of George (See George Municipality, 2012; Western Cape Government, 2015; George Municipality, 2016/17) that are particularly relevant to the SIA:

- The economy of George confirms the town’s status as a secondary city. Financial services and real estate account for the most significant slice of the town’s economy (25%), followed by Wholesale and retail trade, catering and accommodation (16%), and then Transport, storage and communication (13%).
- Much of the contemporary local economic growth happens in sectors such as construction (8%); commercial services (4%); and government, community, social and personal services (4%). Manufacturing reflects a meagre 1.5%.

- The position of the economy of George within the larger Eden District Municipality is not encouraging and it is plagued by economic growth (3.5%) that is slower than other similar municipalities. Employment growth is zero which highlights the fact that the carrying capacity of the local economy is a significant socio-economic limiting factor.
- The total population of George is slightly less than 205 000 people, arranged in nearly 57 000 households. Of the number of households in this town, almost 9 500 exist in abject poverty. The unemployment rate for George is approximately 11%, which, with the problem of poverty and associated socio-economic deprivations, appear geographically concentrated in a few municipal wards.

Given the attributes above, Local Economic Development in George is an important, if not urgent socio-economic priority. The town fortunately has access to several strategic resources that count in its favour from the perspective of economic development. This includes the following:

- Well-developed commercial, financial and social infrastructure.
- Quality conference facilities, businesses and retail services.
- Extraordinary bio-physical and marine resources.
- A growing regional tourism sector and major transport systems, including the N2 National Road and the George Airport.
- Potentially positive role of the George Airport in Local Economic Development.

3. SOCIAL IMPACT ASSESSMENT

Section 3.1 contains an outline of the relevant social impact categories that are associated with the proposed Service Station. This is followed by the presentation and assessment of the identified social impacts that may occur during the construction phase of this development (Section 3.2) as well its operational phase (Section 3.3).

3.1 Social impact categories associated with the proposed development

After the conclusion of the research process (See Addendum A), the results were filtered through the range of possible social change processes and SIA categories. The following three social impact categories (and actual impacts) surfaced throughout the course of the research process.

Social impact categories and impacts:

- ***Socio-economic impacts:*** A project such as the proposed Service Station usually contributes to increased economic activity within a region and generates employment opportunities and other economic impacts due to knock-on effects. Impacts include:
 - The creation of employment opportunities (Construction Phase and Operational Phase)
- ***Empowerment impacts:*** The developer will have to engage in an economic empowerment process in order to supply the proposed Service Station development with the necessary local labour. The impact includes:

- Skills development and transfer (Construction Phase and Operational Phase)
- **Public health and safety impacts:** The construction of the proposed Service Station development will involve the movement of relevant heavy vehicular traffic and the daily transport of workers. The impact revolves around:
 - Public health and safety impacts due to increased construction related vehicular traffic (Construction Phase)

3.2 SOCIAL IMPACTS DURING THE CONSTRUCTION PHASE

3.2.1 Socio-economic impacts

Socio-economic impacts result from employment creation, changes in business activity, livelihoods, economic attributes, etc.

A) Employment creation – impact identification and assessment

Impact identification:

Valued at R20 million, the proposed development represents a civil engineering and construction project of sizeable proportions (Section 1.1). For that reason, a noteworthy outcome of this development throughout its construction phase will be the creation of about 31 direct employment opportunities, most presumably in the semi-skilled category.² Although the

² Direct employment refers to employment that is directly related to the construction phase and would, amongst others, include artisans such as shop fitters, bricklayers, plumbers, electricians, *etc.*

unemployment rate in George Municipality as a whole is only 11%, a figure that appears relatively low when compared to the national situation, unemployment here is geographically concentrated in the town's historically disadvantaged wards. This phenomenon therefore amplifies the adverse welfare related consequences of unemployment at a more local scale. The problem of unemployment is consequently flagged as an important development related 'weakness' in such areas (George Municipality, 2016/17). When looked at in this context, job creation is an important impact of the proposed development.

The creation of direct employment opportunities is not the only job related advantage of the construction phase of the proposed Service Station. A number of indirect and induced employment opportunities would naturally follow the latter. Whereas a direct job is something that is directly related to the construction of a project for example, indirect jobs are created due to the provision of goods and services by suppliers and distributors to the on-site construction activities. Induced jobs lastly result from the spending and consumption by direct and indirect workers (IFC, 2013). Using the same methodology as above (See Note 3), the number of indirect and induced employment opportunities that will be created by the proposed development's construction phase and activities is estimated at 25.

The creation of 56 employment opportunities (direct, indirect and induced jobs) is likely to have a considerable social impact in the form of increased economic activity, poverty alleviation and favourable socio-economic implications (such as improved access to and consumption of goods

The number of direct employment opportunities (31) was estimated using the total construction budget of the proposed development (R20 million) and the latest (2014) *Average Sectoral Employment Multipliers* of the Industrial Development Corporation (IDC, 2016). The applicable multipliers for *Building Construction* and *Civil Engineering* were specifically applied in this case.

and services, greater freedom of choice, better quality of life, and so on) for the affected individuals and their dependants. Using conservative estimates (Western Cape Government, 2015), the latter translates into a total of just more than 200 people. In a town where unemployment is a challenge in some quarters, where employment seekers contribute to a steady population increase, and where employment growth is basically non-existent, employment creation is a significant impact.

Impact assessment:

Impact rating:

Impact type:	Existing impact	Project impact		Cumulative impacts with project mitigation
		Unmitigated	Mitigated	
Intensity:	Major	Major	NA	NA
Duration:	Long term	Short term	NA	NA
Extent:	Local	Local	NA	NA
Consequence:	High	Medium	NA	NA
Probability:	Certain	Certain	NA	NA
Frequency:	Always	Always	NA	NA
Impact status:	Negative	Positive	NA	NA
Impact significance:	Negative high	Positive medium	NA	NA

Assessment risks:

Likelihood of mitigation measures being implemented successfully:	NA
Degree to which impacts can be avoided, managed, or mitigated:	NA
Degree to which impacts can be reversed:	NA
Degree to which impacts could cause irreplaceable loss of resources:	NA
Stakeholder interest:	Positive high
Assessment confidence:	High
Degree to which assessment supports decision-making:	Adequate for decision-making
Gaps and limitations:	NA
Recommendations:	NA

3.2.2 Empowerment impacts

Empowerment impacts result from the social or economic empowerment of vulnerable and other groups.

B) Skills development and transfer – impact identification and assessment**Impact identification:**

The commitment by developers to recruit local labour, as far as possible, in order to benefit local communities in general and the unemployed in particular, is almost standard practice in South Africa when construction projects are proposed. The proposed Service Station is of course no different and a number of employment opportunities will subsequently be created within the

semi-skilled category. This is likely to have a considerable social impact in the form of poverty alleviation and favourable socio-economic implications (improved access to and consumption of goods and services, greater freedom of choice, better quality of life and so on) for the affected individuals and their dependants (Section 3.2.1 A).

One limiting factor that is expected to complicate the prioritisation of local labour during the construction phase of the proposed Service Station is the educational attainment of the prospective labour force, particularly in the case of semi-skilled workers. The twin problems of illiteracy and low levels of post-school education and/or training are clear obstacles in this case. Thus, in order to supply the construction phase of the proposed development with the necessary local labour, the developer will most likely have to engage in a process of skills development and transfer.

In a town burdened by poverty and problematic unemployment rates and where many of the unemployed may actually be unemployable without some form of intervention, skills development and transfer are likely to have a substantial socio-economic impact. The benefits would essentially revolve around the improved socio-economic mobility of people and should extend well beyond the construction phase of the proposed development. Relevant individuals would for example be able to sell their newly acquired skills within and beyond the boundaries of the local economy long after the completion of the construction phase.

Impact assessment:**Impact rating:**

Impact type:	Existing impact	Project impact		Cumulative impacts with project mitigation
		Unmitigated	Mitigated	
Intensity:	Major	Major	NA	NA
Duration:	Long term	Short term	NA	NA
Extent:	Local	Local	NA	NA
Consequence:	High	Medium	NA	NA
Probability:	Certain	Certain	NA	NA
Frequency:	Always	Always	NA	NA
Impact status:	Negative	Positive	NA	NA
Impact significance:	Negative high	Positive medium	NA	NA

Assessment risks:

Likelihood of mitigation measures being implemented successfully:	NA
Degree to which impacts can be avoided, managed, or mitigated:	NA
Degree to which impacts can be reversed:	NA
Degree to which impacts could cause irreplaceable loss of resources:	NA
Stakeholder interest:	Positive high
Assessment confidence:	High
Degree to which assessment supports decision-making:	Adequate for decision-making
Gaps and limitations:	NA
Recommendations:	NA

3.2.3 Public health and safety impacts

Public health and safety impacts result from changes in community health and safety parameters.

C) Public health and safety impacts due to increased construction related vehicular traffic – impact identification and assessment

Impact identification:

The proposed Service Station is likely to generate an increased amount of traffic as far as the daily movement of its workforce is concerned. The transport of workers will of course supplement the other construction related vehicular traffic that is expected to coincide with the Service Station's construction phase.

It can be expected that much of the total traffic volume that will be produced by the proposed Service Station at this stage will share the existing R404 road with regular road users. Although the R404 road appears to have the capacity to absorb the added traffic, the addition of construction related vehicles can nevertheless potentially affect existing mobility patterns. This could culminate in health and safety impacts through the potential increase in motor vehicle and pedestrian related accidents.

Impact assessment:**Impact rating:**

Impact type:	Existing impact	Project impact		Cumulative impacts with project mitigation
		Unmitigated	Mitigated	
Intensity:	Minor	Moderate	Minor	Minor
Duration:	Long term	Short term	Short term	Short term
Extent:	Local	Local	Local	Local
Consequence:	Low	Low	Low	Low
Probability:	Certain	Certain	Possible	Possible
Frequency:	Sporadic	Occasional	Sporadic	Sporadic
Impact status:	Negative	Negative	Negative	Negative
Impact significance:	Negative very low	Negative low	Negative very low	Negative very low

Assessment risks:

Likelihood of mitigation measures being implemented successfully:	Possible
Degree to which impacts can be avoided, managed, or mitigated:	Can be partially mitigated
Degree to which impacts can be reversed:	Can be partially reversed
Degree to which impacts could cause irreplaceable loss of resources:	Highly unlikely
Stakeholder interest:	Positive high
Assessment confidence:	High
Degree to which assessment supports decision-making:	Adequate for decision-making
Gaps and limitations:	NA
Recommendations:	See recommended mitigation

- **Recommended mitigation**

- Establish an information-sharing link with the Community Safety Directory of the George Municipality.
- Comply with relevant health and safety regulations, and applicable legislation, including the Occupational Health and Safety Act (85/1993): 2014 Construction Regulations and the 1996 National Road Traffic Act.

3.2.4 Other construction phase impacts

The above impacts are evidently not the only consequences of the construction phase of the proposed Service Station. Other impacts will undoubtedly occur in addition to these, but the lack of quantifiable particulars (in spite of their importance) or their negligible significance in the broader context of the George Municipality, saw them relegated to this section. The following impacts are singled out here:

- The first impact concerns the positive contribution of the proposed Service Station to the Gross Geographic Product (GGP) of the George Municipality.

GGP provides a measure of the total economic and sectoral activity within a particular area (municipalities, regions, *etc.*). Expressed as the Rand (market) value of all final goods and services that are produced and sold within a given period of time, GGP is a well-known measure of a municipality's economic activity. It can therefore be used to reflect the capability of a municipality to create, sustain and develop its own economy. Contributions to the GGP of any particular place therefore carry an obvious importance, something that is

particularly associated with construction projects (Nhlapo, 2013). Although the actual contribution of the proposed Service Station to the local GGP may appear miniscule in real terms (albeit positive), it will nevertheless happen at a time when the local municipality struggles to come close to its projected GGP growth rate. The George Municipality, in spite of its size, is currently the slowest growing of all other similar municipalities in the Western Cape Province (Western Cape Government, 2015). This reality alone justifies the special mention that the above impact receives.

- The second impact that deserves reference is the positive affect that construction projects such as the proposed Service Station are certain to have on local economies via the demand for goods and services.

Higher levels of local economic activity normally follow the demand for goods and services (and the supply thereof) and this in turn is likely to culminate into various socio-economic benefits, such as employment creation and poverty reduction. The extent of this impact is of course a factor of the size and health of the local economy in question and the subsequent ability of local service providers to meet such demands. It follows that the more limited this ability, the more leakage will take place from the local economy as developers would be compelled to source relevant goods and services elsewhere (DBIS, 2008). Although some leakage will inevitably occur, the impact remains relevant in the context of the positive effect that the demand for goods and services will have on the local economy.

3.3 SOCIAL IMPACTS DURING THE OPERATIONAL PHASE

3.3.1 Socio-economic impacts

Socio-economic impacts result from employment creation, changes in business activity, livelihoods, economic attributes, etc.

A) Employment creation – impact identification and assessment

Impact identification:

When compared with existing developments with similar structural arrangements and a mix of activity elsewhere, it is safe to say that the proposed Service Station development is likely to create about 60 full-time (permanent) employment opportunities during its operational phase. Also, drawing on experience and using the expected annual income of semi-skilled workers (a conservative estimate of approximately R96 000 per worker per year), the wage bill of the proposed Service Station during the first ten years of this phase could be close to R60 million. This amount will of course be earned by members of previously disadvantaged communities, a fact that underscores the importance of the particular social impact.

The creation of long-term jobs also has other noteworthy implications. An example is the multiplication of the income earned by employed people into the local economy and subsequent increased economic activity. It is assumed that much of the income earned by permanent workers will be spent locally on consumer goods, living expenses, accommodation, entertainment, and so on. Over a ten-year period, the increased local economic activity in this

case amounts to slightly more than R59 million.³

In view of the above account, it is clear that the proposed Service Station will have an important impact as far as employment creation is concerned. This is likely to have a considerable (and long-term) social impact in the form of increased economic activity, poverty alleviation and favourable socio-economic implications (such as improved access to and consumption of goods and services, greater freedom of choice, better quality of life, and so on) for the affected individuals and their dependants.

Impact assessment:

Impact rating:

Impact type:	Existing impact	Project impact		Cumulative impacts with project mitigation
		Unmitigated	Mitigated	
Intensity:	Major	Major	NA	NA
Duration:	Long term	Long term	NA	NA
Extent:	Local	Local	NA	NA
Consequence:	High	High	NA	NA
Probability:	Certain	Certain	NA	NA
Frequency:	Always	Always	NA	NA
Impact status:	Negative	Positive	NA	NA
Impact significance:	Negative high	Positive high	NA	NA

³ This estimate was determined by first allowing for an arbitrary leakage (income spent beyond the geographical parameters of the local economy) of 20% from the total wage bill (direct employment). The IDCs Average Sectoral GDP multiplier for *Wholesale and Retail Trade* (IDC, 2016) was finally applied to estimate the increase in local economic activity caused by the operational wages over a decade.

Assessment risks:

Likelihood of mitigation measures being implemented successfully:	NA
Degree to which impacts can be avoided, managed, or mitigated:	NA
Degree to which impacts can be reversed:	NA
Degree to which impacts could cause irreplaceable loss of resources:	NA
Stakeholder interest:	Positive high
Assessment confidence:	High
Degree to which assessment supports decision-making:	Adequate for decision-making
Gaps and limitations:	NA
Recommendations:	NA

3.3.2 Empowerment impacts

Empowerment impacts result from the social or economic empowerment of vulnerable and other groups.

B) Skills development and transfer – impact identification and assessment**Impact identification:**

The assumption that the operational phase jobs will come from the ranks of (local) previously disadvantaged people is highly plausible. Since the local limiting factors of illiteracy and low levels of post-school education and/or training are equally applicable to the proposed Service Station's operational phase, it will most likely have to engage in a process of skills development

and transfer if it is to create the required employment opportunities. Against the background of existing local poverty and unemployment rates in the George Municipality, as well as the fact that many of the unemployed may be unemployable without some form of intervention, skills development and transfer are likely to have a substantial socio-economic impact. The benefits would basically revolve around the improved socio-economic mobility of people relative to their former limited occupational prospects. They will therefore enjoy better access to permanent employment and associated benefits for them as well as their dependants.

Impact assessment:

Impact rating:

Impact type:	Existing impact	Project impact		Cumulative impacts with project mitigation
		Unmitigated	Mitigated	
Intensity:	Major	Major	NA	NA
Duration:	Long term	Long term	NA	NA
Extent:	Local	Local	NA	NA
Consequence:	High	High	NA	NA
Probability:	Certain	Certain	NA	NA
Frequency:	Always	Always	NA	NA
Impact status:	Negative	Positive	NA	NA
Impact significance:	Negative high	Positive high	NA	NA

Assessment risks:

Likelihood of mitigation measures being implemented successfully:	NA
Degree to which impacts can be avoided, managed, or mitigated:	NA
Degree to which impacts can be reversed:	NA
Degree to which impacts could cause irreplaceable loss of resources:	NA
Stakeholder interest:	Positive high
Assessment confidence:	High
Degree to which assessment supports decision-making:	Adequate for decision-making
Gaps and limitations:	NA
Recommendations:	NA

3.3.3 Other operational phase impacts

As the in the case of the construction phase, other impacts are certain to occur in addition to those operational phase impacts that were assessed above. The following impacts are singled out here:

- The contribution of the proposed Service Station to the GGP of the George Municipality, as well as the affect via its regular demand for goods and services are positive impacts that will continue indefinitely into the operational phase.
- The proposed Service Station represents a contribution to Local Economic Development, which, for reasons already stated, is a significant impact.

A strong need exists currently for economic development around the George Airport – in particular as far as the establishment of a sub-regional industrial node in proximity to the N2 National Road is concerned. The proposed Service Station would be strategically well situated in this case to provide an essential supporting service (Marike Vreken, 2017). Moreover, while conforming to the provisions of the Gwayang Local Spatial Development Framework, the development according to this assessment (Marike Vreken, 2017) would also be optimally located to provide services and facilities for tourism support. In short, therefore, the proposed Service Station is likely to exert the following twofold impact here:

- a) In itself as a direct investment to complement the current Local Economic Development situation; and
- b) As a key service provider for the eventual incubation of other Local Economic Development activities around the George Airport. The proposed Service Station will in this sense play an enabling role in the establishment and functionality of a local agglomeration economy.

3.4 PROJECT FEASIBILITY

In the sections above, several social impacts of the proposed Service Station were identified. These impacts are predominantly positive and mostly related to the creation of employment opportunities, economic empowerment, GGP, and Local Economic Development – something that would contribute to the George Municipality's wellbeing and that of its inhabitants. The eventual realisation of such impacts is however a factor of the feasibility of the proposed Service Station, and, if feasible, the actual implementation of the development proposal. The feasibility of this project will be assessed in this section via the prominent question regarding its Need and

Desirability in the first place, followed by its financial feasibility. The influence of other potential Service Station developments (on alternative sites) will finally receive attention.

A) Need and Desirability

The Need and Desirability of a proposed development is essentially the domain of the Town Planning specialist study in the broader Environmental Impact Assessment (EIA). The question of *Need* is basically an expression of the timing of a proposed development and the relevant investigation should answer the question regarding the necessity for a project at a particular point in time. *Desirability* on the other hand concerns the location of a proposed development and the relevant investigation should determine whether the proposed placing of a development in geographical space is the best possible site for the land-use in question (South Africa, 2010).

The question of the Need and Desirability of the proposed Service Station was addressed by the Specialist Planning Report for this proposed development (Marika Vreken, 2017). Reacting to the planning requirement of the **Need** for the proposed Service Station in the first place and simultaneously determining whether this development would be a societal priority at this point in time, the latter Specialist Study (p.35) concludes as follows:

“There is a strong need for the economic development around the George Airport to establish a new sub-regional industrial node in proximity to the N2 and airport, targeted at Southern Cape manufacturing, freight and logistics, and service industries. The provision of a fuelling station and station shop would contribute to the development of additional airport related uses in an area earmarked for the particular uses by providing a mix of employment opportunities, supporting development consistent with the planning policies of the area, decreasing the need of a fuelling

station in the airport area without adversely impacting on the environment. There is therefore a strong need for this development at this time.”

The employment related social impacts that the proposed Service Station is likely to have (See Section 3.2.1 A and 3.3.1 A) as well as those linked to the empowerment of previously disadvantaged people (See Section 3.2.2 B and 3.3.2 B), in addition to the last-mentioned conclusion, clearly emphasise the need for and the societal priority that this development would be. Since the Desirability of a proposed development is also a factor of its impact on the well-being of people, the last-mentioned contributions can likewise be positively aligned with the Desirability requirement.

Considering the **Desirability** for the proposed Service Station, this proposal was rated to be consistent with relevant policy frameworks and planning instruments. This includes the National Development Plan, George Spatial Development Framework, George Municipality Integrated Development Plan, as well as the principles of the Spatial Planning and Land Use Management Act (Act 16 of 2013) (Marika Vreken, 2017). The desirability of the proposed Service Station is however also a factor of its location as noted above. As far as this is concerned, the Specialist Planning Report lists several attributes which favour the location of the proposed Service Station. These include the following (p.36):

- *“The proximity of the property to the existing George Airport – the property is opposite the airport; the entrances are across from one another. The proposed development is within the Airport Support Zone.*
- *The property is easily accessible – there is an existing entrance to the property that would allow for easy and safe access, once it is tarred and the proposed traffic circle is developed.*

- *This area is envisaged as a small node at the intersection to the airport. The development contributes to the establishment of the node.*
- *The proposal will support tourists and airport facilities that cannot be located in the town with the same practical function.*
- *The property provides an ideal setting to further a tourist and service centre on the corridor linked with the entrance of the airport could provide tourists with basic services*
- *The site of the proposed development is vacant and the area falls outside any environmental protected areas.”*

B) Financial feasibility

Financial feasibility is a crucial aspect of the proposed Service Station and the realisation, or otherwise, of the impacts identified in this report. Although several factors may contribute to the financial feasibility of service stations (See the Department of Energy RAS Matrix Guidelines, 2015), one stands out as unquestionably essential. This involves the obvious question of fuel sales and the extent to which monthly / annual fuel sales are likely to exceed a particular margin. A commonly applied equation in this case follows (See also Roodt, 2018):

$$\text{Average Monthly Fuel Sales} = \text{Average daily passing traffic} \times \text{Average trading days per month} \times \text{Average fill per vehicle} \times \text{Net Interception rate}$$

The following data applies to this formula:

- Average daily traffic (vehicles approaching the R404 - Airport intersection) = 4410
- Average trading days per month = 30.4 days
- Average fill = 25 litres

- Net interception rate = 10.5%

Note that all values in this case are for 2017. The daily traffic count was escalated from 2014 baseline data. Average fill and the net inception rate reflect actual 2017 trends in the immediate market region.

For 2017, the Average Monthly Fuel Sales (litres) based on the equation above is 351 918 (or 4 223 016 litres per annum). This volume far exceeds the 2 789 851 litres per annum viability threshold in the Department of Energy RAS Matrix Guidelines (Annual Benchmark Service Station Volume), a critical attribute of the proposed Service Station that in essence answers the question of its financial feasibility.

C) The feasibility of potential Service Station developments on alternative sites

The final concern regarding the feasibility of the proposed Service Station relates to Service Station developments that could possibly happen on two alternative sites.

The first possibility is located on the property of the Airports Company of South Africa (See Figure 2). Roodt (2018) provides a detailed assessment of this case (See Section 9.2, George Airport Filling Station). This report highlights numerous restrictions and fatal flaws around the questions of access, compliance to relevant policy and official guidelines, and impacts on existing roads and road safety. In short, the site in question appears not to be technically feasible.

The second possibility is located directly to the east of the R102/R404 intersection. Concerning this particular case, Roodt (2018) concludes as follows:

“Based on traffic engineering considerations for filling stations, the site must be conveniently accessible from the pass – by road. This site does not provide such access and would require (again based on traffic engineering considerations) considerable signage to inform, guide and direct potential users to the filling station and facilities. It is therefore not surprising that the site was not developed since 2005 and the approval has lapsed. The access shown as a service road next to the R404 is not good engineering design, as the headlights of vehicles travelling at night will shine from the wrong direction for vehicles driving south on the R404.” . . . “From a traffic engineering point of view, this application has little merit and chance of development.” (p.30).

The verdict in this case is therefore equally unfavourable, if not more so, than for the above-mentioned Airport Filling Station.

D) Note on the feasibility of the proposed Service Station development

In view of the above three discussions, it should be concluded that:

- There is a positive Need and Desirability for the proposed Service Station;
- Its financial feasibility is confirmed; and
- The proposed site for this development is the only viable site.

The proposed Service Station would as a result be a feasible development and the (mostly positive) social impacts associated with it, certain to happen.

A: STUDY APPROACH

SIA methodology

SIA generally includes *“the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by these interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment”* (IAIA, 2003:2).

The above IAIA definition highlights two critical issues, namely social process and social consequence (impact), which are tied together in a cause-and-effect relationship. The influential distinction between social process and social consequence in the context of SIA, similar to the difference between biophysical change and biophysical impact in the context of EIA, comes from the model developed by Slootweg *et al.* (2001). Strongly advocated by the International Handbook of Social Impact Assessment (Slootweg *et al.*, 2003), this model is subscribed to by the present study. It underlies the importance of segregating social process from social impact and ultimately supports the understanding of the processes that can result in social impacts (Aucamp, 2009).

With reference to the effects of proposed development projects, Slootweg’s *et al.* (2003) model suggests pathways or social change processes which may culminate in social impacts. Accordingly, development interventions can result in intended or unintended (social change) processes. Such processes are discreet and observable and may alter the characteristics of a society. They also take place regardless of particular societal contexts (population groups, nations, religions, *etc.*). Under certain conditions (community attributes or the nature and extent

of mitigation measures for example), social change processes may ultimately result in social impacts.

Several social change processes can be recognised as the fundamental drivers of social impacts. These include the following according to Van Schooten *et al.* (2003) and supplemented by the author of the current report (See also Vanclay *et al.*, 2015):

- Demographic processes that relate to the movement of people and/or the demographic composition of human populations;
- Human health and safety processes that affect the physical, mental and material well-being of people;
- Socio-economic processes that affect the economic activity and socio-economic status of people and/or the way they make a living (livelihoods);
- Geographic processes that affect land-use and associated patterns;
- Institutional processes that affect the organisations that are responsible for urban, provincial or national governance as well as the supply, regulation and maintenance of the goods and services on which people depend;
- Empowerment processes that affect the ability of people to influence decision-making and the circumstances that impact on their daily lives and well-being;

- Socio-cultural processes that affect the social culture of a society, referring to aspects of the way people live together and / or how this manifests in geographical space;
- Socio-spatial processes that affect the way in which people relate to their residential environments (place utility or sense of place); and
- Intrusion processes that relate to imposed environmental disturbance in the form of pollution.

The above list of social change processes is obviously not complete due to the complex nature of human society and invariably as a result of the multitude of ways in which it may respond to change (Vanclay, n.d.).

The identification of social change processes during SIA is naturally followed by the identification of social impacts. Following the above-mentioned distinction between social process and social impact, a social impact, according to The Interorganizational Committee on Guidelines and Principles for Social Impact Assessment (2003:231), can be defined as:

“Consequences to human populations of any public or private actions – that alter the ways in which people live, work, play, relate to one another, organize to meet their needs, and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and their society.”

Social impacts are also something that may be physically experienced (objective impacts in other words that can be quantified, such as changes in people’s health and safety) or emotionally perceived by people (subjective impacts in other words that manifest in the ‘minds’

of people, such as emotional stress, reduced quality of life, or an altered sense of place). Such experiences and perceptions can be either positive or negative.

Faced with the obvious complexity subsumed in the identification of social impacts in multifaceted human societies, a framework of SIA categories is often referred to by practitioners for guidance. The following comprehensive set of SIA categories is adapted by the present study from Burdge (2004) and act as essential parameters for the structured identification and presentation of social impacts:

- Population related impacts ~ resulting from changes in population attributes, the (induced) migration of people, the inflow of a temporary labour force, *etc.*
- Socio-economic impacts ~ resulting from employment creation, changes in business activity, livelihoods, economic attributes, *etc.*
- Empowerment impacts ~ resulting from the social or economic empowerment of vulnerable and other groups.
- Individual and family level impacts ~ resulting from changes in human movement patterns and social networks, the relocation of individuals and families, *etc.*
- Public health and safety impacts ~ resulting from changes in community health and safety parameters.
- Impacts related to community resources ~ resulting from impacts on cultural sites and social and/or physical infrastructure, *etc.*

- Impacts related to community arrangements ~ resulting from impacts on interest groups.
- Institutional impacts (related to government institutions) ~ resulting from infrastructural demand and supply issues, changes in institutional image, land-use change, gentrification, policy related demands, *etc.*
- Intrusion impacts ~ resulting from air pollution, noise pollution, light pollution, visual pollution and malodour pollution.
- Socio-cultural impacts ~ resulting from social disintegration; the creation and/or maintenance of social differentiation, segregation or social inequality, *etc.*
- Socio-spatial impacts ~ resulting from changes in people's place utility or their sense of place.

It is at this stage important to note the social impact variables that resort under the different social change processes may naturally overlap, while the actual social impacts associated with different impact variables may also coincide. For example, socio-economic impacts that result from employment creation may overlap with empowerment impacts that result from the social or economic empowerment of vulnerable and other groups.

SIA research process

The recognition of social change process categories and relevant SIA variables, and the subsequent identification and assessment of potential social impacts associated with the

proposed development, were the product of a combined qualitative-quantitative empirical research approach.

Conventionally, two empirical approaches feature prominently in SIAs, *i.e.* a technical (or quantitative) approach and a participatory (or qualitative) approach. With reference to the former, the SIA practitioner generally assumes the role of a neutral and distant observer of social phenomena. Accordingly, relevant social indicators and objective measures and information are identified and applied to aid the eventual assessment of social change and social impact. In a participatory approach on the other hand, the SIA practitioner relies on the knowledge and experience of individuals that are affected by proposed changes as the foundation from which social impacts are projected. The facilitation of knowledge sharing and the interpretation and reporting of impacts define the role of the SIA practitioner in this case (Sogunro, 2001; Becker *et al*, 2004).

The quantitative element of the SIA research process integrated the following methodological aspects:

- A literature review;
- A review of published and unpublished research and official reports; and
- Professional judgement and experience.

The qualitative element of the SIA research process involved a site visit and a series of semi-structured key stakeholder interviews with:

- Social impact practitioners (review purposes)
- Economic analysts (review purposes)

It is finally important to emphasise that quantitative research (particularly if stakeholder interviews are conducted) is subject to stringent research ethics; confidentiality amongst others being one of the key considerations (Grinyer, 2002; Vanclay *et al.*, 2015). In line with ethical guidelines, the names, addresses or other personal / institutional information of the respondents cannot be revealed.

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MEMORANDUM OF SETTLEMENT AND COOPERATION

Entered into between:

EIGHT MILE INVESTMENTS 236 (PTY) LTD

Registration Number 2004/029922/07

Herein represented by MR GUSTAV TERBLANCHE duly authorised thereto
(hereinafter "the Applicant")

and

DYNARC CAPITAL (PTY) LTD

Registration Number 2003/018697/07

Herein represented by WILLEM JURIE JOHANNES VAN HEERDEN
duly authorised thereto
(hereinafter "the First Respondent")

and

GEORGE AEROTROPOLIS (PTY) LTD

Registration Number 2017/511256/07

Herein represented by QUINTIN MICHAEL ROSSI duly authorised thereto
(hereinafter "the Seventh Respondent")

A collection of handwritten signatures and stamps. On the left, there is a vertical signature. To its right is a circular stamp with illegible text. Below these are several more signatures, including a large, bold one in the center, and a signature that looks like 'M.' on the right. At the bottom, there are more signatures, including one that starts with a large 'B'.

and

GEORGE MUNICIPALITY

Herein represented by DR MICHELE RENÉE GRATZ duly authorised thereto
(hereinafter "the Second Respondent")

WHEREAS the parties are currently involved in a litigious matter under case number 620/2020 in the IN THE HIGH COURT OF SOUTH AFRICA, (EASTERN CIRCUIT LOCAL DIVISION, GEORGE) (hereinafter "the matter"); and

WHEREAS the parties are desirous to settle the matter finally on the terms and conditions set out hereunder; and

WHEREAS the Seventh Respondent has entered into / is in the process of entering into (*delete whichever is not applicable*) a deed of sale ("the sale agreement") with the First Respondent in terms of which Portion 131 of Portion 60 of the Farm GWAYANG No 208, in the Municipality and District of George, Western Cape Province and held by Certificate of Registered Title T61312/2017 ("the Property") is sold by the First Respondent to the Seventh Respondent; and

WHEREAS the sale agreement is subject to the suspensive condition that this Memorandum of Settlement and Cooperation ("the settlement") be entered into by the parties by no later than 12h00 on 30 APRIL 2021.

NOW THEREFORE the parties agree and record as follows:

A collection of handwritten signatures and initials in black ink, arranged in a cluster at the bottom right of the page. The signatures are stylized and vary in size, representing the parties to the settlement.

TERMS OF SETTLEMENT:

1. The Applicant shall withdraw its High Court Application under case number 620/2020 ("case 620/2020") on fulfilment of the terms and conditions set out herein.
2. The First and Seventh Respondents herewith give their undertaking that:
 - 2.1 no part of Portions 130, 131 and 132 of Portion 60 of the Farm GWAYANG No 208, in the Municipality and District of George, Western Cape Province (hereinafter "Portions 130,131 and 132") shall be rezoned by them or their successors in title for a service station;
 - 2.2 any purported existing rights for a service station on Portions 130,131 and 132 are forfeited by them;
 - 2.3 no service station shall be erected on Portions 130,131 and 132 and
 - 2.4 this undertaking (paragraph 2) shall be registered against the respective title deeds as a restrictive condition, by way of notarial agreement between the parties providing for restriction of use.
3. The First and Seventh Respondents, or their successors in title, shall be entitled to apply for the rezoning of any party of Portions 130,131 and 132 for any use other than a service station as set out in paragraph 2 above.
 - 3.1 Further to the above, the Seventh Respondent herewith specifically records that it intends to apply for the rezoning of its property to industrial, retail and mixed rights, to the full exclusion of a service station.

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4. The Applicant agrees that it shall not object or solicit any objection to any application in terms of any applicable statutory provision which may be required to change the land use rights which attach to Portions 130, 131 and 132, subject to paragraph 2 above, or other even owned by the First or Seventh Respondents or in which the First or Seventh Respondents have an interest, and to implement any development proposed by the First or Seventh Respondents or any successor in title other than a service station.
5. The First and Seventh Respondents shall not object or solicit any objection to any application in terms of any applicable statutory provision which may be required to change the land use rights which attach to the Applicant's property, being Portion 4 of the Farm GWAYANG No 208 ("Portion 4/208"), and to implement any development proposed by the Applicant or any successor in title, including a service station. Any objection which may have been submitted by the Applicant, First- and Seventh Respondents against their respective application/s for Environmental Authorisation for development of Portions 4, 130, 131 and 132 shall be withdrawn and be replaced by their formal support of said respective application/s.
6. The Applicant shall support any rezoning or other land use application, other than a service station, submitted by the First or Seventh Respondents or its successors in title in respect of Portions 130, 131 and 132.
7. The First and Seventh Respondents shall, subject to the Applicant's acceptance of the Municipality's proposed Road Master Plan:
 - 7.1 unreservedly support any rezoning or other land use application, including a service station, submitted by the Applicant or its successors in title in respect of Portion 4/208;
 - 7.2 provide support for the Applicant's application for a fuel supply licence as far as possible; and

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- 7.3 all objections lodged by the First and Seventh Respondents against the Applicant's application for subdivision and rezoning of Portion 4/208 shall be retracted and withdrawn.
8. The Applicant herewith consents to, and grants access over its property as is required in terms of the Roads Master Plan which has been proposed by the Municipality and is supported by the Department of Transport and Public Works.
- 8.1 It is also to be noted that the George Municipality cannot commit to the approval of any landuse applicator final layout until the Roads Master Plan has been finally concluded (i.e. Environmental Authorisation issued).
- 8.2 Further to the above, the First and Seventh Respondents agrees to retract in writing, their application submitted by Delplan Consulting for the Removal of Restrictive Conditions.
9. The First and Seventh Respondents undertake to deliver their formal withdrawal of their stated opposition to case 620/2020 on signature hereof by all parties involved.
- 9.1 A copy of the abovenamed withdrawal shall be served and filed on all parties to case 620/2020.
10. That the Municipality, as the Second Respondent and the only remaining Respondent, who opposed the relief sought by the Applicant in the matter, agrees to the withdrawal of the matter and the retraction of its opposing affidavit conditional upon the legal costs of the Municipality incurred under case 206/2020, which shall not exceed the amount of R120,000.00 (ONE HUNDRED AND TWENTY THOUSAND RAND), and which will not be subject to taxation, being settled in equal 1/3 shares by the Applicant, and the First and Seventh Respondents, by no later than 14 (FOURTEEN) calendar days after signature of this agreement by all the parties.

The image shows several handwritten signatures and initials in black ink. There are approximately seven distinct marks, including a large stylized signature on the right, a circular stamp or signature in the center, and several other initials and signatures on the left and bottom. The handwriting is cursive and somewhat informal.

11. The Applicant, First- and Seventh Respondents herewith record that, insofar as any development of their respective properties mentioned herein, either independently or by way of an envisioned joint venture, might affect the Sixth Respondent, the Bulk Infrastructure Contribution Levies payable during that development/s shall be borne by them and no contribution shall be payable by the Sixth Respondent until he commences development on his property or opts to become part of the said envisioned joint venture. The terms of such joint venture shall be agreed between the relevant parties in a separate agreement, which this settlement shall not be conditional upon.
12. That the First Respondent shall be entitled to cede and/or assign its rights in terms of the settlement agreement to any successor in title without the consent of the Applicant.
13. That each party in the litigation under case number 620/2020 shall bear its own costs.
- 13.1 Notwithstanding the above, the First and Seventh Respondents shall each contribute an amount of R70,000.00 (Seventy Thousand Rand) towards the Applicant's legal costs incurred in the interlocutory application.
14. Each party shall pay their own costs in respect of the costs of this agreement and any documents drafted pertaining thereto.
15. That any party be entitled to have the settlement agreement made an order of Court and that the costs incidental to such Court order be paid by the party or the parties jointly who required the Court order.
16. This settlement agreement constitutes the whole agreement between the parties and no warranties or representations, whether express or implied, not stated herein shall be binding on the parties. No agreement signed at variance with the terms of

A collection of handwritten signatures and initials in black ink, located at the bottom right of the page. The signatures are stylized and overlapping, with some appearing to be initials like 'B' and 'J'.

and conditions of this settlement agreement shall be binding on the parties unless reduced to a written agreement signed by or on behalf of the parties.

17. Save as provided for in this agreement, neither party shall have any further claims against the other and each party hereby waives and abandons all and any such claims.

18. This Agreement may be executed in one or more counterparts and in separate each of which when executed will be deemed to be an original but when taken together will constitute one and the same agreement. The Agreement will only come into being once all the Parties hereto have signed such counterparts.

Signed at *Ribera* on 29 APRIL 2021.

AS WITNESSES:

1. *R. Besch*

2. *[Signature]*

[Signature]
EIGHT MILE INVESTMENTS 236
APPLICANT (Gustav Terblanche)

Signed at *George* on 29th APRIL 2021.

AS WITNESSES:

1. *[Signature]*

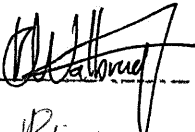
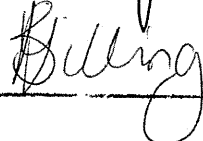
2. *[Signature]*


[Signature]
DYNARC CAPITAL
FIRST RESPONDENT (Willem
Jurle Johannes van Heerden)

[Handwritten signatures and initials]

Signed at CAPE TOWN 7 on 29TH APRIL 2021.

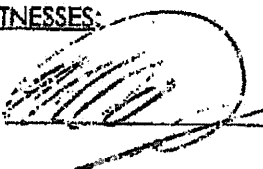
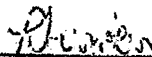
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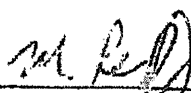
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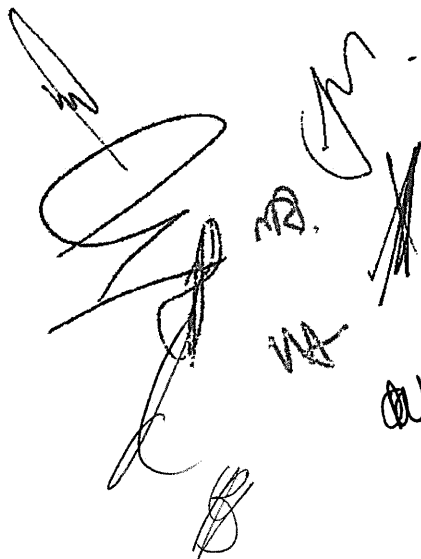

 GEORGE AEROTROPOLIS
 SEVENTH RESPONDENT (Quintin
 Michael Rossi)

Signed at George on 29TH APRIL 2021.

AS WITNESSES:

1. 
2. 


 GEORGE MUNICIPALITY
 SECOND RESPONDENT (Dr
 Michele Renee Gratz)





Proposed Service Station on Portion 4 of the Farm Gwayang

Comparison between alternative locations

March 2018

1. Introduction

Eight Mile Investments 236 (Pty) Ltd is planning the development of Portion 4 of the Farm Gwayang No 208. The proposed development includes the development of a fuel service station.

There are two competing proposals for service stations in the immediate vicinity of the proposed service station. These facilities are located on Portion 131 and Portion 84 of the Farm Gwayang. The first mentioned site is located on the south-eastern quadrant of the intersection of provincial roads R102 and R404. The other site is located on the north-western quadrant of the R404 and the Airport access road intersection.

2. Purpose

The purpose of this report is to evaluate the technical feasibility of the competing facilities as well as to compare the economic feasibility of alternative locations. The report therefore considers the potential of the three sites to serve the needs of road users and the local community including the Airport, other commercial land uses such as the quarry and various nurseries, residential areas such as Herolds Bay and Glentana as well as the farming community between George and Groot Brak.

3. Methodology

In order to meet the mentioned purpose this document reports on the outcome of the following considerations:

- Impact of the alternatives on the local traffic and access to the Airport;
- Potential of alternatives to optimally serve the local market;
- Potential of the alternatives to serve the Airport Node.

The methodology used is to study all relevant planning documents for the area. These documents include the Spatial Development Framework for George as well as the Local Spatial Development Framework for the Gwayang area, local provincial road planning and development planning of the Airport Precinct. These documents provide detail on the planning framework within which Portion 4 should be integrated in order to ensure optimal benefits of future developments for the larger community as well as local stakeholders.

The Gwayang Local Spatial Development Framework refers to the Airport as Airport Zone and the land immediately to the east of the Airport as Airport Support Zone. This report makes use of this terminology. The drawing attached in Annexure A shows the Airport Zone marked in grey and the Airport Support Zone marked in dark blue.

4. Traffic impacts

a. Provincial road planning

Provincial road planning in the immediate vicinity of the Airport has a significant impact on the development of the Airport and Airport Support Zones. The drawing attached as Annexure B shows detail of road planning in the Gwayang area. The proposed re-alignment of R404 as indicated on the drawing, has a major impact on the development planning of the mentioned zones. Access to land bordering the R404 and the R102 in the immediate area of the intersection of the two roads, is prohibited in terms of road planning. Lines of no access apply along the mentioned roads as shown on the development layout planning drawing attached in Annexure C.

The road planning effectively limits access to the Airport Support Zone to the current intersection along the R404 where the Airport currently exclusively gains access to the major road network. At present this is a three legged at grade intersection. A fourth eastern leg to be added to the intersection will provide access to the Airport Support Zone.

b. Impact on access to proposed service station on Portion 131

Resulting from the mentioned proclaimed provincial road planning, access to any possible service station at the south-eastern quadrant of the R102/R404 intersection is prohibited from both the R102 or the R404. Access to any development on this land will be via the internal road system of the proposed development on Portion 4. This indirect access to a potential service station renders the service station not feasible. Service stations are competing on the basis of convenience. This access arrangement results in a detour of approximately 300 m to gain access. This renders the site not financially feasible.

c. Access to proposed service station on Portion 84

The proposed service station on ACSA land at the intersection of the main airport access road and provincial road R404 is proposed to take access from the main Airport access and distribution road. The drawing attached in Annexure D shows the proposed facility layout. The proposed access to the service station is via a mini-circle at a distance of approximately 60m from the main access intersection on the R404.

TRH 26: South African Classification and Access Management Manual, was compiled under the auspices of the Road Coordinating Body of the Committee of Transport Officials. This document provides guidance to national, provincial and municipal spheres of government on the functional classification of roads as well as how roads must be managed in order to function effectively.

In terms of TRH 26 provincial road R404 is classified as a class 2 road. Similarly, the main access road to the Airport is classified as a class 4 road. In order to function effectively TRH 26 advises that intersections along class 4 roads should be spaced at minimum distance of 150 m. (*Road Access Guidelines of the Provincial Administration Western Cape* advises a minimum spacing of 120 m.) This spacing requirement is proposed with specific reference to mobility and road safety considerations.

In contrast with the mentioned spacing requirements, the distance between the existing main access intersection to the Airport and the proposed intersection giving solely access to the proposed service station, is merely 60 m. See layout drawing in Annexure E for spacing. The existing spacing between the main access intersection and the first intersection inside the Airport (to unscheduled flights) is merely 120 m. This existing condition does not meet the spacing requirements of TRH 26. It is therefore not in the interest of sound road management, mobility and road safety to add a further intersection on this road link at a spacing of merely 60 m to the main intersection on the R404 where the airport gains access.

Drawings in Annexure F show the consequences of the turning manoeuvres of a large truck moving to and from the proposed service station onto the Airport main access road. The truck practically has to ignore the traffic circle as proposed by ACSA. This movement results in unacceptable conflicts between the vehicle attempting to gain access to the service station and vehicles entering or leaving the Airport. This impact is merely one of several unacceptable impacts if spacing requirements proposed by TRH 26 are ignored.

Access from the road leading to unscheduled flights to the proposed service station on Portion 84 may however be possible. The drawing attached in Annexure G shows the schematic layout to the proposed service station with access from the road to unscheduled flights. This possible solution will be subject to a detailed traffic engineering analysis and will have to be integrated into the road master plan for the Airport.

d. Current problems experienced at the Airport access intersection

Access to the Airport is currently already problematic. The queue formation at the intersection is significant. The photo below was taken on 18 February 2017. It shows traffic queuing along the Airport approach. The queue stretches beyond the traffic circle proposed to give access to the service station on ACSA land.



Congestion at the Airport access and the resulting queue length will increase as the Airport passenger throughput increases. The limited frontage length of the proposed ACSA service station therefore warrants the development of a site at that location undesirable.

A further significant safety risk results from the lack of pedestrian facilities along the main Airport access and circulation road. This results in pedestrians walking in the basic lanes of the main Airport access and circulation road. The photo below shows a pedestrian walking along the Airport main access and circulation road in the vicinity of the proposed mini-circle to give access to the ACSA service station on Portion 84.



The congestion at the R404 intersection with queue formation and pedestrian movements combined with the limited access spacing proposed by ACSA contributes to road safety risks and mobility constraints.

e. Public transport facilities

The Gwayang Local Spatial Development Framework specifically addresses the lack of public transport facilities at the Airport. The photo below shows an airport traveller approaching the Airport main building on foot after being dropped off at the main access intersection at the R404. It confirms the need for public transport not only for workers at the Airport but also airport passengers.

The road edge of the Airport main access and circulation road (approaching the R404 from the Airport) provides an opportunity to provide a public transport layby. A layby in this position will be ideal for workers at the Airport Precinct.



The proposed mini-circle to give access to the proposed ACSA service station will make this option impossible.

f. Access to proposed service station on Portion 4

Access to the proposed facility on Portion 4 is in accordance with the requirements of TRH 26 and the Road Access Guidelines of the Provincial Administration Western Cape. It will consequently have no adverse impacts on the road network. The proposed service station will have no impact on accessibility of the Airport. Refer to the drawing in Annexure C for more detail.

5. Serving the needs of road users

a. Background

A service station at the Airport or Airport Support Zone will serve transient traffic along R102 and R404. It will also serve local traffic generated by the Airport, future Airport Support Zone, commercial land uses such as nurseries and the quarry, residential areas such as Glentana, Herolds Bay, Oubaaï and Fancourt as well as the local farming community between Groot Brak and George. The current east to west spacing of service stations between the service station in Groot Brak and the service stations in George is approximately 21 km. The residential, commercial and farming communities in this area is therefore poorly serviced.

Travellers returning hired vehicles to car hire operators at the Airport, will also make use of this facility. Some of the car hire companies will also utilise the facility.

The accessibility of the three alternative positions proposed for a service station must be evaluated with the potential market to be served in mind.

b. Access to Portion 131

Access to the proposed facility on Portion 131 is indirect and inconvenient. It will be via the internal road system to be developed on Portion 4. This is inappropriate for the mentioned market segments. It is also inappropriate to route external traffic to a service station at that location via the internal road system of the proposed development on Portion 4. A service station in this location will therefore poorly serve the larger community.

c. Access to Portion 84

A service station on Portion 84 is ideally located to serve traffic leaving the Airport. It will merely require a left-in and left-out manoeuvre. All other patrons will have to make right turn manoeuvres to enter the service station. This includes all vehicles entering the Airport as well as vehicles attracted from the R404 or R102. These right turn manoeuvres will be inconvenient and dangerous due to the limited spacing to adjacent intersections and congestion along this road link.

Accessing this site will be inconvenient for heavy vehicles. The large vehicle movement tracking as indicated on the attached drawing clearly points to the inconvenient access arrangement at this location. It is clear that the access will be ideal for a small section of the market, but inconvenient and dangerous for all other potential patrons.

The Gwayang Spatial Development Framework advocates facilities to be developed on ACSA land to relate to the basic functions of the Airport. A service station serving the larger community between Groot Brak and George is clearly not a basic function of the Airport.

The mandate of ACSA is to develop gateway precincts with associated commercial activities. It goes beyond the mandate of ACSA to compete with other service providers to provide for the non-airport related needs of the larger community between Groot Brak and George.

For reasons of road safety, mobility and proper planning the service station to be developed on Portion 84 can only gain access from the road leading to unscheduled roads. With an access in that location the service station will primarily serve airport related activities. It is ideally located to serve car hire companies and their patrons. A service station developed in this manner will also comply with the mandate of ACSA.

d. Access to Portion 4

Access to the proposed facility on Portion 4 meets all road design guidelines and will be convenient for all road users attracted from the R404, R102 and the Airport.

6. Airport – importance and future development potential

The Gwayang Local Spatial Development Framework dated November 2015 forms part of the George SDF. The document states: *"George Airport plays a significant role in the Southern Cape's tourism industry and whether directly or indirectly, creates and supports jobs and economic growth for the George area "* and *"Efficient airports are an essential part of the transport networks that all successful modern economies rely on. The George Airport is a crucial transport hub for the Southern Cape. As demand for travel increases, modern economies expect and demand a range of services and facilities at these transport hubs to improve their travel experience and to support their businesses. The George Airport is continuously improving on the service they render, which will also contribute to the development of the Southern Cape economy."*

It is therefore abundantly clear that the Airport plays a crucial role in the economy of the Southern Cape.

It is further relevant to consider the rapid growth rate of George Airport. According to data published by Airports Company South Africa (ACSA) an average annual growth rate of 8.1% for passengers was noticed from 2013 to 2017. This rapid growth rate is adding substantial pressure on the existing airport facilities. Passengers making use of the Airport is currently approximately 750 000 per annum.

In his State of the Nation Address of 16 February 2018 President Ramaphosa specifically mentioned the critical role to be played by tourism and the potential doubling of tourism in South Africa. In the interest of the future development of the Southern Cape's tourism industry it is important to plan the Airport with due allowance for future expansions. This Airport will continue to play an important role in the economy of the region.

It is unthinkable to jeopardise the long-term convenience, capacity and safety of the Airport road access system in lieu of the development of a petrol service station. The service station can be provided without any impact on the future development of the Airport within the proposed development of Portion 4.

7. Conclusion and recommendations

Based on the current road and spatial planning of the Gwayang area that includes the Airport, the Airport Support Zone and the local residential, commercial and farming areas, it is clear that a service station must be developed on Portion 4. A service station serving the Airport with safe access from the road leading to unscheduled flights is also technically feasible and within the mandate of ACSA.

The following table summarises the conclusions as discussed above.

Consideration	Location	Notes	Score
Accessibility	Portion 131	<ul style="list-style-type: none"> Access indirect via development on Portion 4. Detour of 300 m to gain access 	Poor
	Portion 84	<ul style="list-style-type: none"> Access from main Airport access road does not meet sound road planning guidelines. It will be unsafe and will impact on mobility. Access from the road to unscheduled flights may be technically feasible if properly integrated into the road master-plan for the Airport. 	Poor
	Portion 4	<ul style="list-style-type: none"> Access convenient for all road users. Access via traffic circle at location of proposed service station. 	Good
Road safety	Portion 131	<ul style="list-style-type: none"> Access via Portion 4 meets all road safety requirements. 	Good
	Portion 84	<ul style="list-style-type: none"> Access does not meet requirements of TRH 26: South African Classification and Access 	Unacceptable

		<p>Management Manual or Road Access Guidelines of the Provincial Administration Western Cape.</p> <ul style="list-style-type: none"> • Impacts negatively on road safety and mobility. • Access via road to unscheduled flights may meet requirements of TRH 26 if properly integrated into the road master-plan of the Airport Zone. 	
	Portion 4	<ul style="list-style-type: none"> • Access meets provincial, national and international design guidelines. 	Good
Long term development considerations	Portion 131	<ul style="list-style-type: none"> • No impact on long term development of Airport and Airport Support Zone. 	Good
	Portion 84	<ul style="list-style-type: none"> • Negative impact on future development of Airport road access system. • Negative impact on future public transport facilities. 	Unacceptable
	Portion 4	<ul style="list-style-type: none"> • No impact on future development of Airport or Airport Support Zone. 	Good
Ability to serve	Portion 131	<ul style="list-style-type: none"> • The facility will not be able to serve the market due to indirect access. 	Poor
	Portion 84	<ul style="list-style-type: none"> • Ability to serve heavy vehicles poor due to constrained access via mini-circle. • Ability to serve vehicles exiting Airport is good through left-in-left-out movement. • Ability to serve all other road users is poor due to substandard access along congested road link. • Ability to serve all Airport related patrons via access from road leading to unscheduled flights is good. 	Unacceptable
	Portion 4	<ul style="list-style-type: none"> • Facility will serve the market well due to properly designed access system in accordance with National and Provincial road design guidelines. 	Good
Impact on long term development of Airport	Portion 131	<ul style="list-style-type: none"> • No impact. 	Good
	Portion 84	<ul style="list-style-type: none"> • Significant impact on development potential of the Airport due to limited spacing along main access to Airport. • Impacts on mobility and road safety along main Airport access and circulation road. 	Unacceptable

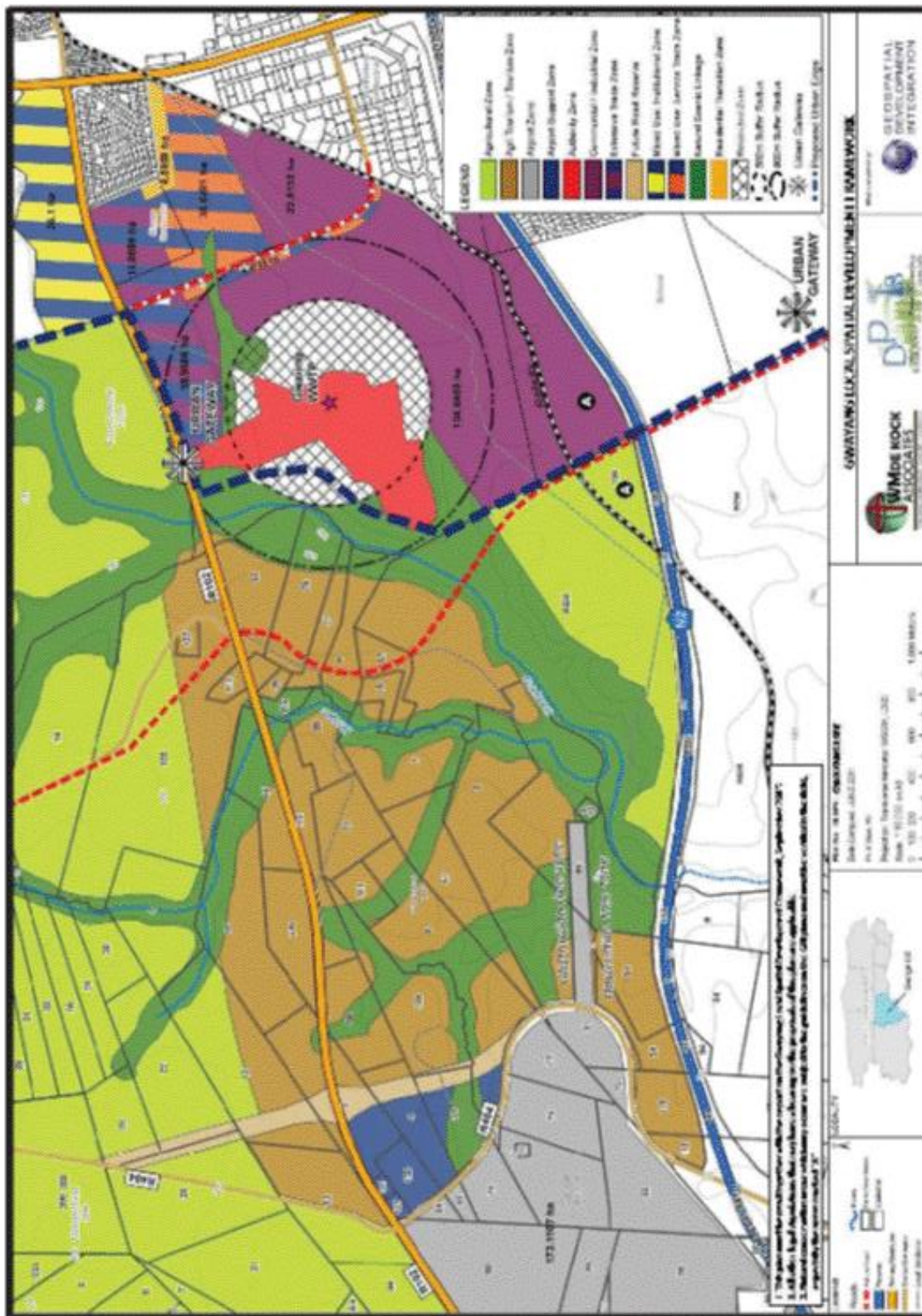
	Portion 4	<ul style="list-style-type: none"> No impact. 	Good
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The proposed location for the development of a service station on Portion 131 is not acceptable due to poor and inconvenient access via the proposed internal road system of Portion 4.

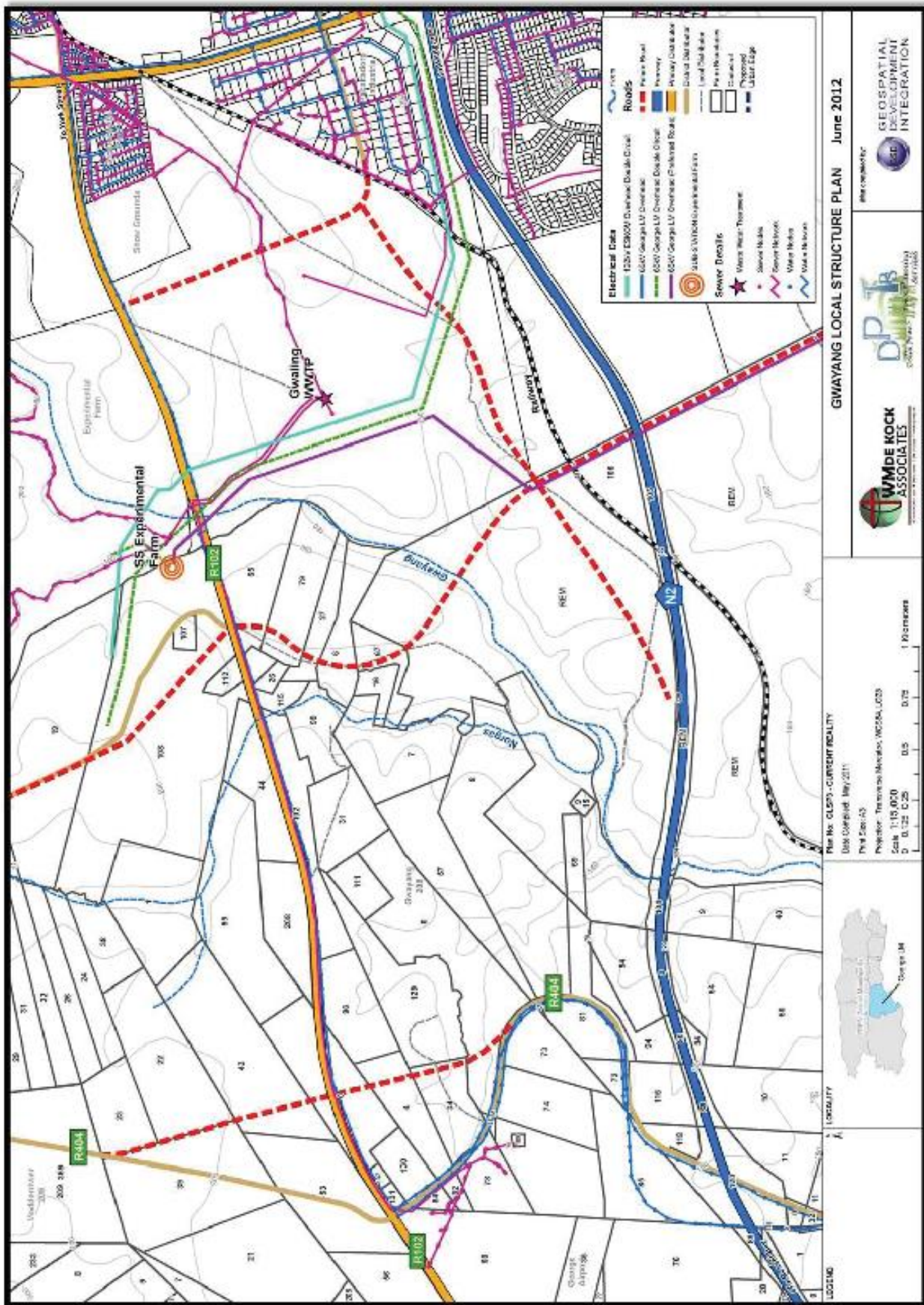
The proposed ACSA facility on Portion 84 is fatally flawed due to the non-compliance of the proposed access mini-circle with national and provincial road design guidelines. Access via the road to unscheduled flights is however acceptable and will serve Airport related land uses.

The proposed facility on Portion 4 will meet all the road access requirements and will optimally serve the local market, including the residential, farming and commercial land uses.

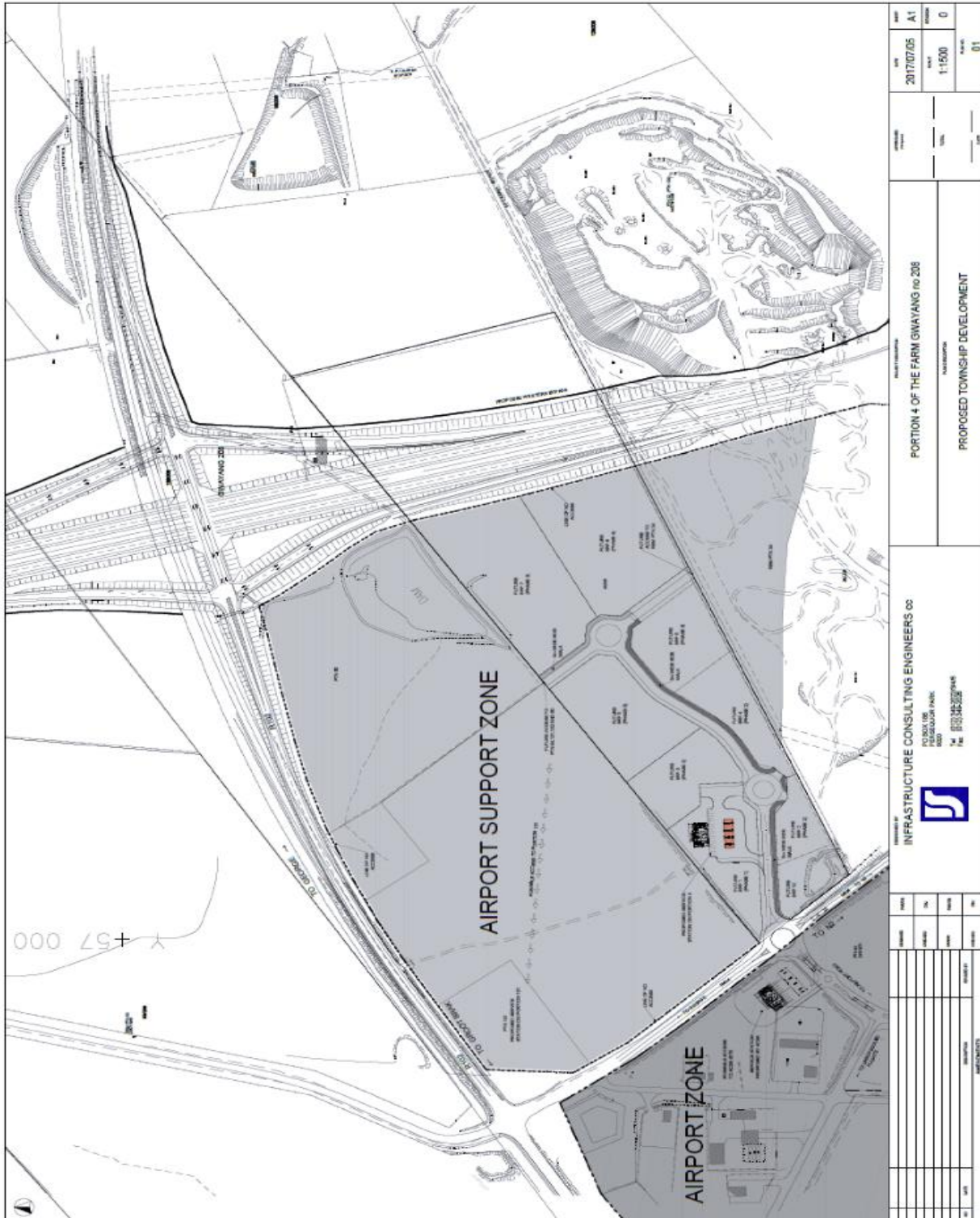
Annexure A



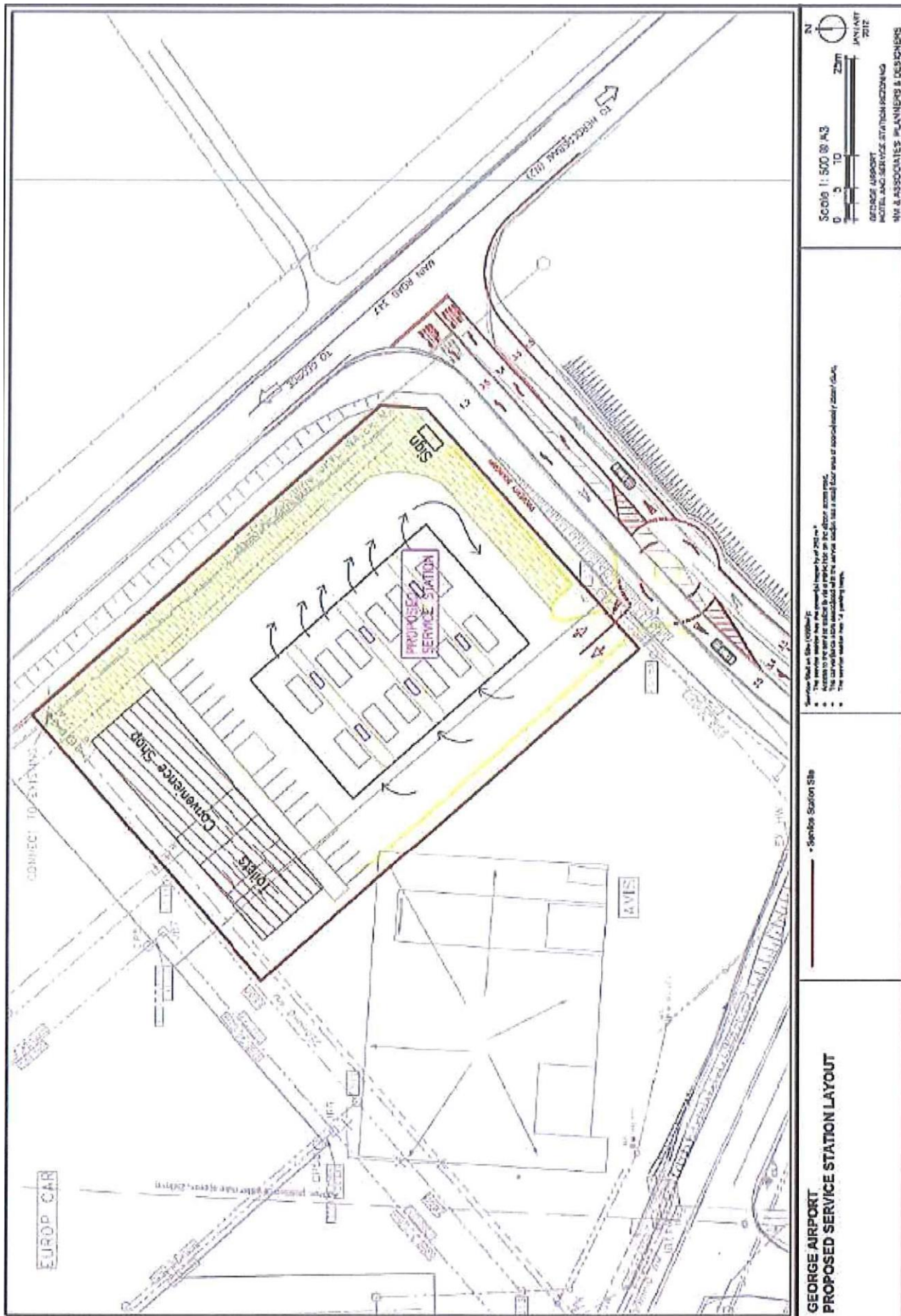
Annexure B



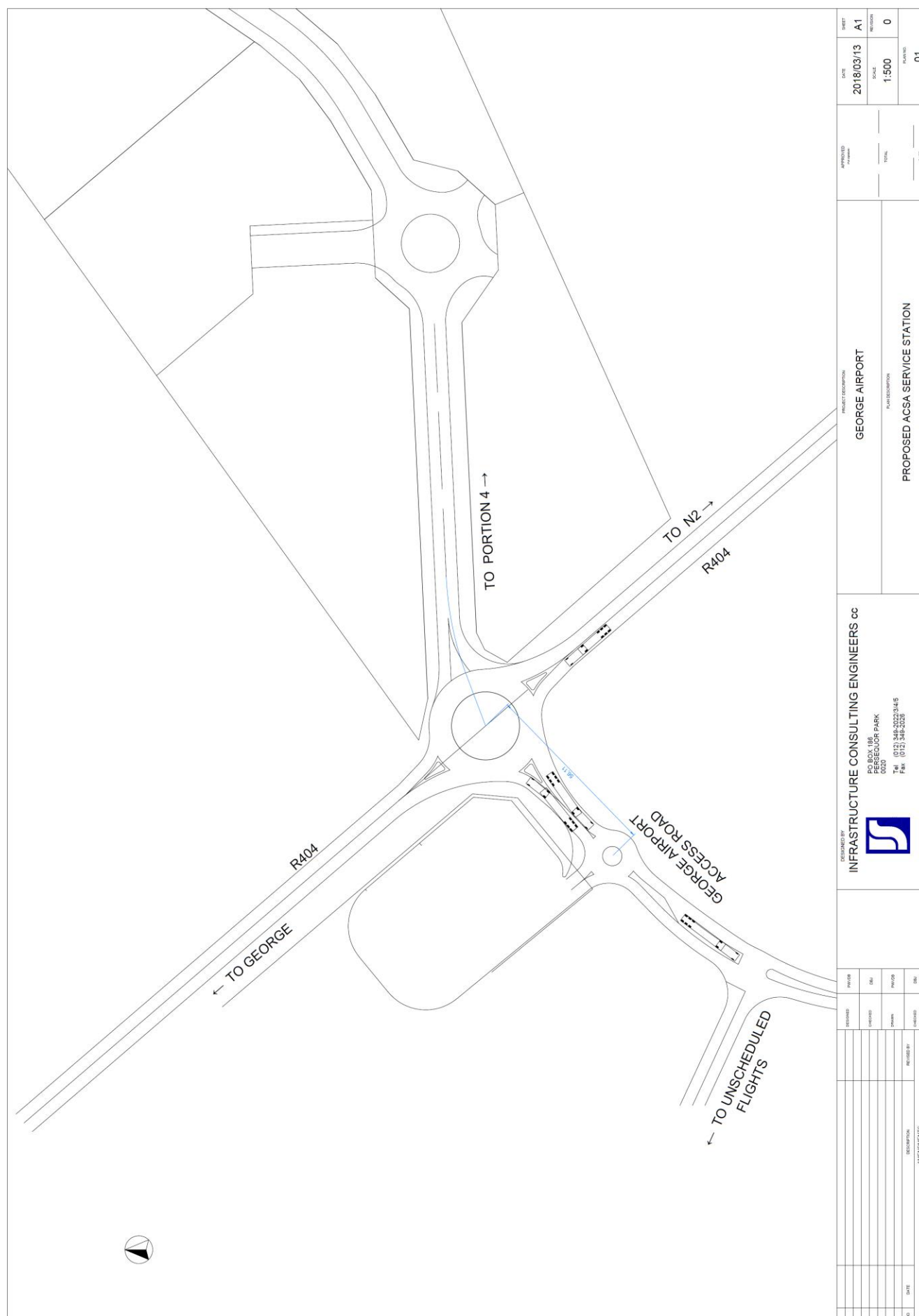
Annexure C



Annexure D



Annexure E




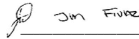
An aerial photograph of a commercial site with overlaid planning information. A large irregular polygon, outlined in red and green, defines the project boundary. Inside this boundary are several parking lots, some labeled "CONCRETE SHOP" and "SERVICE STATION". To the north of the main lot is a smaller rectangular area also outlined in red and green, containing a building and more parking spaces. The site is bordered by a multi-lane road at the top with arrows indicating traffic flow. Other nearby features include a "TRUCK STOP" sign, various other buildings, and additional parking areas. A legend in the bottom right corner identifies the red outline as "PROPOSED DEVELOPMENT AREA" and the green outline as "EXISTING BIG TREES". A north arrow is located in the top left corner.

[illegible]

This aerial photograph shows a proposed service station layout overlaid on an existing parking lot. The layout is contained within a large, irregular polygon. At the top of the layout is a 'PROPOSED SERVICE STATION' area, which includes several service bays and arrows indicating the flow of vehicles. To the left of this area is a 'CONVENIENCE SHOP' area, which includes a set of stairs and a parking area. The layout also includes various other parking spaces and a north arrow in the top left corner.


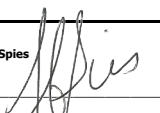
[illegible]

Annexure "T"

CES Development Charges Calculator				Version 3.00		June 2020	
				Erf Number	Portion 4 of 208		
				Allotment area	George		
				Water & Sewer System	George System		
				Road network	George		
				Developer/Owner	8 Mile Investments 236 BK		
				Erf Size (ha)	10,9		
				Date (YYYY/MM/DD)	2021-10-22		
				Current Financial Year	2021/2022		
Collaborator Application Reference				1874539			
Code	Land Use		Unit	Total Existing Right		Total New Right	
GENERAL BUSINESS							
	Filling Station	station					1
		m² GLA				9930	2 482,50
	Warehousing and Distribution	m² GLA				46181	34 635,75
Is the development located within Public Transport (PT1) zone?				Please select			
				Yes			
Calculation of bulk engineering services component of Development Charge							
Service	Units	Additional Demand	Unit Cost	Amount	VAT	Total	
Roads	trips/day	1539,07	R 2 902,73	R 4 467 507,60	R 670 126,14	R 5 137 633,74	
Sewerage	kl/day	140,68	R 43 481,05	R 6 116 989,11	R 917 548,37	R 7 034 537,48	
Water	kl/day	175,85	R 36 320,84	R 6 387 097,56	R 958 064,63	R 7 345 162,20	
Transfer	application		R 350,00	R 0,00	R 0,00	R 0,00	
Total bulk engineering services component of Development Charge payable				R 16 971 594,28	R 2 545 739,14	R 19 517 333,42	
Link engineering services component of Development Charge							
Total Development Charge Payable							
City of George				Developer/Owner			
Calculated (CES): JM Fivaz							
Signature : 							
Date : October 22, 2021							
NOTE : In relation to the increase pursuant to section 66(5B)(b) of the Planning By-Law (as amended) in line with the consumer price index published by Statistic South Africa) using the date of approval as the base month							
Notes:							
Departmental Notes:							

For the internal use of Finance only

Service	Financial code\Key number	Total
Roads	20160623 020158	R 5 137 633,74
Sewerage	20160623 018776	R 7 034 537,48
Water	20160623 021593	R 7 345 162,20
Electricity	20160623 021336	R 0,00
Transfers	20160623 019267	R 0,00
		R 19 517 333,42

Development Charges Calculator				Version 1.00		16 September 2021	
 <div style="float: right; text-align: right;"> Erf Number Allotment area Elec DCs Area/Region Elec Link Network Elec Development Type Developer/Owner Erf Size (ha) Date (YYYY/MM/DD) Current Financial Year Collaborator Application Reference </div>				Portion 4 of Farm 208 Gwaying			
				George			
				George Network			
				MV			
				Normal			
				8 Mile Investment 236 BK			
				0			
				2021-10-06			
				2021/2022			
				1874539			
Code	Land Use		Unit	Total Existing Right		Total New Right	
	Other Land Uses		Actual Demand				936
Is the development located within Public Transport (PT1) zone?				Please select Yes			
Calculation of bulk engineering services component of Development Charge							
Service	Units	Additional Demand	Unit Cost	Amount	VAT	Total	
Electricity	kVA	936,00	R 6 243,63	R 5 844 033,49	R 876 605,02	R 6 720 638,51	
Total bulk engineering services component of Development Charge payable				R 5 844 033,49	R 876 605,02	R 6 720 638,51	
Link engineering services component of Development Charge							
Total Development Charge Payable							
City of George Calculated (ETS): C Spies Signature :  Date : October 6, 2021							
NOTE : In relation to the increase pursuant to section 66(5B)(b) of the Planning By-Law (as amended) in line with the consumer price index published by Statistic South Africa) using the date of approval as the base month							
Notes:							
Departmental Notes:							

For the internal use of Finance only

Service	Financial codeUKey number	Total
Electricity	20160623 021336	R 6 720 638,51
		R 6 720 638,51