

Report No. 119/1

George Municipality
Proposed Development of Portion 278
of the Farm Kraaibosch 195 George
Addendum to the October 2017 Traffic
Impact Assessment Prepared in terms
of Section 55(2) of the Land-use
Planning By-law for George
Municipality (2015)

Date: January 2019

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Project Name: Addendum to the October 2017 Traffic Impact Assessment

Proposed Development of Portion 278 of the Farm Kraaibosch 195 George

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Certification Letter

22 February 2019
George Municipality
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To whom it may concern

Dear Sir/Madam

RE: ADDENDUM TO THE TRAFFIC IMPACT ASSESSMENT: PROPOSED
DEVELOPMENT OF PORTION 278 OF THE FARM KRAAIBOSCH 195 GEORGE

This addendum to the October 2017 *Traffic Impact Assessment* has been prepared in terms of section 55(2) of the Land-use Planning By-law for George Municipality (2015) in response to comments that have been received from the George Municipality Directorate of Civil Engineering Services and the South African National Roads Agency Limited (SANRAL) and has been prepared in accordance with the requirements of the *South African Traffic Impact and Site Traffic Assessment Manual* (TMH 16) and the Municipality's terms of reference for Traffic Impact Assessments.

Yours faithfully

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1. Introduction

1.1 Background

On 23 October 2017 Jan Vrolijk Town Planner applied, in terms of sections 15(2)(b) and 15(2)(o) of the Land -Use Planning By-law for George Municipality, 2015 (LUP By-Law) for a departure and several consent uses, respectively, for a proposed development on portion 278 of the Farm Kraaibosch 195.¹ Incorporated in the consent use application was a comprehensive Traffic Impact Assessment (hereinafter TIA) prepared in terms of the South African Traffic Impact and Site Traffic Assessment Manual.²

The first, initial, comment received from the Directorate Civil Engineering Services (DCES), representing the Municipality road authority (MRA), was dated 8 March 2018 and is included herewith as Annexure A.

A meeting was subsequently held between the applicant and officials of the DCES on 21 May 2018 to discuss the initial comment of the DCES and the recommendations of the TIA.

Due to this meeting the DCES decided to supplement its initial comment with additional, supposed “preliminary comments”, which were received on 24 May 2018. These additional comments are included herewith as Annexure B.

Because the TIA correctly identified that the only intersection that was to be impacted by the proposed development is the roundabout situated on the N2—a national road falling under the jurisdiction of the South African National Road Agency Limited (SANRAL)—the application, together with the comprehensive TIA, was submitted to the SANRAL for approval.

¹ Vrolijk *Motivation Report* 2ff.

² Gray *Traffic Impact Assessment*; COTA *TMH* 16.

SANRAL unconditionally approved the proposed development and therefore by implication unconditionally approved the TIA.³ An extract of SANRAL's approval of the TIA dated 2 September 2018 is incorporated as Annexure C.⁴

The purpose of this addendum to the October 2017 *Traffic Impact Assessment*, (TIA) is firstly, to discuss the comments of the MRA, especially in the light of the subsequent SANRAL approval of the TIA and the proposed development and secondly, to provide the approving authority with the applicant's written reply in terms of section 55(2) of the Land-use Planning By-law for George Municipality (2015) to the comments received.

This addendum must be read in conjunction with the TIA.

2. Existing approved access to portions 278 and 282

2.1 Introduction

Both the initial and additional comments of the MRA allege that the existing access to portions 278 and 282 is "substandard in terms of spacing from the circle (sic)" and "is not within the guideline parameters ito (sic) access spacing".

These allegations are based on the application of the access spacing requirements for new accesses retrospectively to an existing approved access.⁵

2.2 Historical background to the approved existing access

Although, as alleged by the MRA, "the history [of the existing access] is known to the applicant and various authorities"⁶ it is considered necessary to record the history below for clarification of how the existing approved access to portions 278 and 282, in its present form, came into existence.

Portion 278, a portion of portion 1 of the farm Kraaibosch No.195 was registered in terms of SG diagram number 5715/2002⁷ and was approved by the Surveyor General (SG) on 18 December 2002. Portion 278 is situated adjacent to the N2

³ The conditions imposed are generic and are not site specific and are applicable to all approved applications.

⁴ SANRAL's full approval letter can be supplied on application.

⁵ COTA TMH 16 Vol 2 21f.

⁶ See Annexure B.

⁷ See Vrolijk *Motivation Report*.

highway and was provided with a direct access to the N2 approved by the relevant road authority, SANRAL.⁸

Portion 282, a portion of portion 278, was registered in terms of SG diagram number 598/2004⁹ and approved by the SG on 14 July 2004.

The existing Sasol service station and ancillary facilities were developed on this portion in 2004.

Portion 282 had a direct approved access to the N2 and portion 278 was provided with a servitude right of way access over portion 282. Therefore, portion 278 has a praedial servitude; that is a limited real right in perpetuity for access to a public road via portion 282.¹⁰

The layout of the existing approved access to portions 278 and 282 (the Sasol filling station) as at April 2010 is shown in figure 1 below.



Figure 1 Access to portions 278 and 282 circa April 2010

⁸ S44 of The South African National Roads Agency Limited and National Roads Act, 1998 (hereinafter the NRA).

⁹ See Vrolijk *Motivation Report*.

¹⁰ See Badenhorst, Pienaar and Mostert *The Law of Property* 321ff for details of praedial servitudes and especially a “way of necessity”.

In 2010 the Municipality road authority authorised the design and construction of an access road to the proclaimed Welgelegen Estate residential township. This access road (hereinafter Welgelegen Road) made use of portion 282's existing approved access to the N2. The access to portion 282 therefore had to be redesigned and reconstructed to accommodate the Welgelegen Estate access road and the construction of a roundabout to replace the priority-controlled intersection.

The present existing access to portion 282, as shown in Annexure D, Welgelegen Road and the roundabout was designed by consulting civil engineers (Kantey and Templer (Pty) Ltd). These designs were approved by both road authorities, namely SANRAL and the Municipality, in 2010 and 2011 respectively and should have, at the time, taken into consideration the access spacing requirements and standards for new intersections.

The Municipality road authority is now alleging that the existing access to portion 282—that is to the Sasol filling station—which it and SANRAL approved in 2010, has somehow now, 8 years after construction, become “substandard”.

If the access is now considered substandard it must have been substandard in 2010 when it was designed and constructed on behalf of the Municipality road authority and therefore should never have been approved by either that authority or SANRAL.

in terms of their approval of the proposed development (see Annexure C) the existing approved access is acceptable to SANRAL who are the road authority having jurisdiction over the critical “upstream functional boundary distance” from the roundabout on the N2.¹¹

The access spacing standard is not the most important standard to be considered when assessing an existing access. The most important standard is the traffic safety standard and it will be proved below that the existing access is not “substandard”—

¹¹ WCG *Access Management Guidelines* 125f.

regarding traffic safety—and the MRA’s allegation in this regard is unjustified and unsubstantiated.¹²

In other words, the existing access is not a traffic hazard that must be relocated.

2.3 Historical background to the proposed development of portion 278

In September 2015 the current owner and applicant submitted a similar application to the current application to the municipality for approval.

A meeting was subsequently held with officials of the DCES who advised the applicant that his application will only be acceptable to the municipality if the scope of the proposed development is “scaled down”. No mention was made by the MRA in 2015 that the existing approved access to the filling station was considered “substandard”.

The applicant heeded this advice and has “scaled down” the proposed development and subsequently resubmitted the application, together with a comprehensive TIA, in October 2017.¹³

2.4 Access spacing and separation¹⁴

“Access management is the essential counterpart to functional classification”.¹⁵ The functional classification of roads and access management go hand in hand with the former preceding the latter.¹⁶ The spacing of accesses and intersections along a road is therefore dependent entirely upon the functional classification of the road¹⁷ and the types of intersections and accesses.¹⁸ As stated in the TIA the existing access road to Welgelegen Estate can only, presently, be classified as a Class U5b residential local street—the road’s only function is to provide access to adjacent

¹² COTA TRH 26 4.

¹³ The application therefore complies with s 38(3)(b) of the National Land Transport Act, 2009.

¹⁴ COTA TMH 16 Vol 2 21ff.

¹⁵ COTA TRH 26 37.

¹⁶ See COTA TRH 26 57 for the two-step process for road classification and access management.

¹⁷ COTA TRH 26, 1; COTA TMH 16 Vol 2, 4; the functional classification of the roads is to be determined by the Municipality. To date George municipality have not classified their roads and therefore the functional classification of roads herein is my own based on the methodology contained in TRH 26.

¹⁸ COTA TMH 16 Vol 2 21f.

properties and the only purpose for the construction thereof was to provide Welgelegen Estate with an access to the N2.¹⁹

Welgelegen Road is therefore presently an access road and its function and functional classification will not change in the foreseeable future—especially not within the 5-year horizon period of the TIA.²⁰

The existing approved access to portion 282—excluding the egress (see Annexure D), which was exclusively designed and constructed to accommodate heavy vehicles (especially interlinks) exiting the service station²¹—is a full access priority-controlled intersection and therefore the minimum distance to an adjacent priority-controlled intersection on the N2 must be at least 75m.²²

From Annexure D the access spacing to the N2 is 80.8 m which would have been adequate for priority-controlled intersections.

The construction of the roundabout—towards the end of 2011—created the alleged substandard access spacing—nonetheless it was still approved by the road authorities.

It must be noted that the egress only facility falls entirely within the area of jurisdiction of SANRAL, see figure 2 below—in other words the MRA has no jurisdiction over the egress only facility and it therefore falls outside the scope of this addendum.

Even if the existing approved access is considered substandard, regarding access spacing, the MRA must still prove that the access is a traffic hazard and is unsafe before it can implement retrofitting procedures such as closure and relocation.²³

In any event, as will be discussed below, the onus is on the road authority wishing to close an existing access to provide a feasible alternative access.²⁴

¹⁹ COTA TRH 26, 30; Gray *Traffic Impact Assessment* 3.

²⁰ COTA TRH 26 15ff.

²¹ It must be noted that closure of the egress by the road authority, SANRAL, would have no impact on the main access to portion 282.

²² COTA TRH 26 49.

²³ COTA TRH 26 43, 59.

²⁴ See s44(5) of The South African National Roads Agency Limited and National Roads Act, 1998.

In this instance there is no feasible alternative access to portions 282 and 278. Furthermore, the existing access complies with all the conditions provided in TRH26²⁵ for an existing access to be maintained; especially as it complies with the more important road safety requirements contained in TRH 16 Volume 2.

It will be proved below that the existing access complies with road safety standards and requirements.²⁶

2.5 The relevant road authorities and their jurisdictions

The road authority for the national road, the N2 highway adjacent to the site, is SANRAL.

SANRAL's jurisdiction extends for 60m (the "building restriction area")²⁷ either side of the N2's boundaries and therefore the roundabout and the critical "upstream functional boundary distance"²⁸ of the existing roundabout falls within SANRAL's jurisdiction (see figure 2 below).

The George Municipality road authority therefore only has jurisdiction over the access road to Welgelegen Estate; presently a Class U5b residential local street.

As stated in the TIA the only intersection that will be impacted upon by the proposed development is the roundabout on the N2 and therefore the MRA's comments on the TIA are extraneous *vis-a-vis* SANRAL's approval of the proposed development and the TIA.²⁹

²⁵ COTA TRH 26 43.

²⁶ COTA TMH 16 Vol 2 63ff.

²⁷ NRA sections 1 and 44(5).

²⁸ WCG Access Management Guidelines 86,126.

²⁹ Gray Traffic Impact Assessment 1 6.



Figure 2 Jurisdiction of Roads Authorities

2.6 Status of existing access

All portions of land have limited real rights of access to public roads and all subdivisions of land must, in terms of legislation, be approved by, *inter alia*, the relevant road authorities and provided with an approved access to a public road.³⁰

The existing access to portions 282 and 278 complies with the relevant legislation and road safety standards. Also, the TIA for the proposed development of portion 278 has, accordingly, been approved by the relevant road authority; SANRAL.

There is presently no feasible alternative access to portion 278 and therefore no road authority—especially not, in this instance, the George Municipality road authority—has legitimate or justifiable grounds to deny the owner of portion 278 access to the Welgelegen Estate access road or the right to develop the property in terms of Integrated Development Plans and Spatial Development Frameworks.³¹

³⁰ See sections 44 and 49 of the NRA.

³¹ COTA TRH 26, 43.

Furthermore, the existing access “does not jeopardise [or impact on] the possible future provision of intersections to the public road network or accesses to other developments in the area”.³²

2.7 Road traffic safety aspects of the existing access

The design speed of Welgelegen Road is 60km/h.

The critical road safety standard, regarding the existing access, is the stopping sight distance required for vehicles travelling on Welgelegen Road approaching the access from the north (Welgelegen Estate) and the south (the N2) to enable these vehicles to stop, in an emergency, when a vehicle exiting or entering the filling station inadvertently enters or crosses Welgelegen Road when it is unsafe to do so.³³

The stopping sight distance requirements for vehicles travelling southbound on the Welgelegen Road is 80m (+3% gradient, 60km/h)³⁴ and 20m for northbound vehicles (0% gradient, 20km/h).³⁵

The existing stopping sight distance for northbound vehicles is 60m (see figure 2 above) which is the stopping sight distance required for vehicles travelling at approximately 50km/h. This speed is considered excessive for vehicles exiting the roundabout and therefore the 60m stopping sight distance is more than adequate.

³² COTA *TRH 26*, 43.

³³ See WCG *Access Management Guidelines* 126f regarding the left turn conflict distance.

³⁴ Cf 82m for the left turn conflict distance WCG *Access Management Guidelines* 127.

³⁵ COTA *TMH 16 Vol 2* 65.



Figure 3 Northbound stopping sight distance

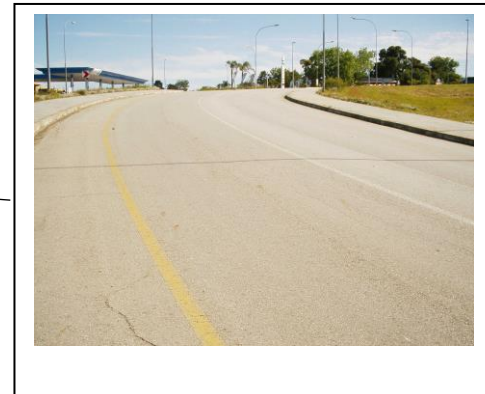
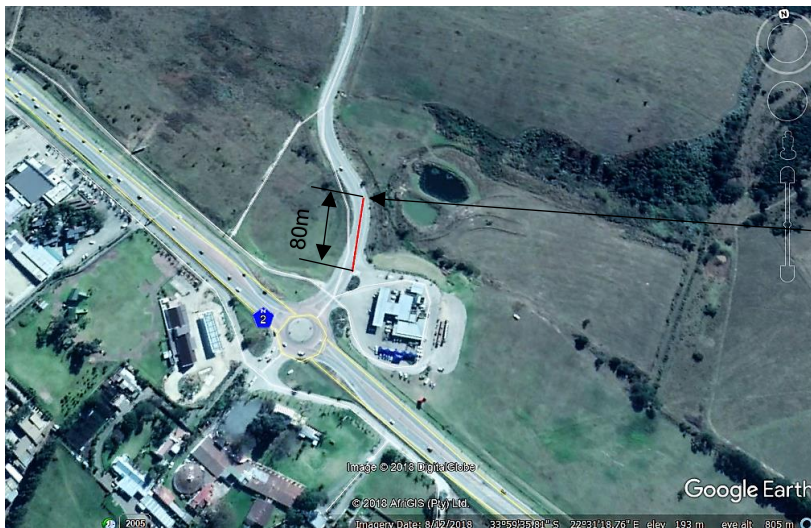


Figure 4 Southbound stopping sight distance

From figure 4 above it can be seen that the southbound stopping sight distance is greater than 80m.

3 Discussion of MRA's comments

The MRA's comments dated 24 May 2018 will be discussed *ad seriatim* below.

3.1 Existing access

The status and acceptability of the existing access has been extensively covered hereinbefore. It was not elaborated on in the TIA because of its status as an existing approved access designed by professional engineers.³⁶

Because the existing access falls within the municipal road reserve it must have been approved by the MRA in 2010 when it was constructed.

Although the existing access is from a municipal road falling under the jurisdiction of the MRA it also falls within the jurisdiction of SANRAL, being within the “building restriction area” of the N2 national road. The existing access has also been approved by that road authority.

Because of the insignificant existing traffic volumes entering and exiting the existing Sasol filling station and the anticipated minimal traffic volumes that could be generated by the proposed development, it was envisaged that the existing access would have zero influence on the capacity and LOS of Welgelegen Road. For this reason, traffic analyses of the existing intersection were not included in the 2017 TIA.

However, because of the comments received from the DCES, it was decided to carry out a SIDRA analysis of the existing intersection (see paragraph 5 below).

As expected the proposed development will have zero impact on the capacity and LOS of the existing Welgelegen Road (paragraph 6 below).

The “stacking” (sic) distances from the roundabout have been addressed in the TIA³⁷; for the northern approach (Welgelegen Road) the maximum is 10.5m which is equivalent to approximately 2 passenger car units.

The “stacking” (sic) distances for the northbound right turning lane in terms of this report are also negligible; maximum 4.2m which is equivalent to approximately 1 passenger car unit.

Both the above-mentioned “stacking” distances are within the jurisdictional area of SANRAL and therefore the MRA’s comments in this regard are irrelevant.

³⁶ Gray Traffic Impact Assessment 13.

³⁷ Gray Traffic Impact Assessment 34ff.

3.2 George Roads Master Plan and “Welgelegen Roads Master Plan”

The existing approved access to portions 282 and 278 predates these plans which were prepared in June 2006 and August 2006 respectively.

It must be noted that the latter “master plan” is not a master plan *per se* but is titled *Road Based Development Contributions for the Welgelegen Area in George*³⁸ The document forms part (Annexure D) of the services agreement entered between The George Municipality and the Developers of Welgelegen Estate.

The “Welgelegen roads master plan” (WRMP) supersedes the George Roads Master Plan for the area north of the N2 highway.

In terms of the George Roads Master Plan (GRMP) the so-called Southern Bypass terminates at the N2 highway at “Rademachers filling station”.³⁹ The first segment of the proposed Southern Bypass was scheduled for completion in 2010 with completion to the N2 by 2025.⁴⁰

To date the first segment has not even been commenced with and therefore the relevancy of the GRMP regarding the TIA for the proposed development of portion 278 must be questioned.

The WRMP proposes two mobility roads to serve the Welgelegen area of which only one, Welgelegen Road, has been constructed to date. In terms of the WRMP this road has been designed and constructed as a class 3, urban minor arterial road.

The WRMP does not include an “access spacing study” as alleged by the MRA and therefore the access spacing requirements for Welgelegen Road must be inferred from the functional classification of the road.⁴¹

As stated previously the present functional classification of Welgelegen Road is a class U5b residential local street, an access road.⁴²

Roads master plans and access management plans are only applicable to new proposed accesses to the existing road network. Because there is an existing

³⁸ ITS *Welgelegen Development Contributions*.

³⁹ K & T *George Roads Master Plan 2006 27*.

⁴⁰ K & T *George Roads Master Plan 2006 30*.

⁴¹ See COTA *TRH 26 57ff* for details of access management plans.

⁴² COTA *TRH 26 30*.

approved access to portions 282 and 278 the roads master plans are not considered relevant and applicable to the TIA for the proposed development of portion 278.

Only when the function of Welgelegen Road is upgraded to a class 3, urban minor arterial mobility road, could the spacing between the existing access and the roundabout become an access management issue that may require the MRA or SANRAL to consider the relocation of the existing access to portions 282 and 278.⁴³

Presently Welgelegen Road is only an access road and therefore the existing “[h]istorical rights” to access must prevail.⁴⁴

A further factor that could affect the access separation (from the roundabout) requirement of the existing access is if Welgelegen Road is upgraded in the future to a dual carriageway which would result in the existing access becoming a partial access.⁴⁵

Speculation as to when the function of Welgelegen Road will be upgraded to a class 3 road or a dual carriageway is beyond the scope of this addendum to the TIA.

Presently the existing approved access is compliant with national road safety standards.⁴⁶

Provision has been made in the WRMP for the development of a hotel on portion 278. This would require a rezoning whereas the current proposed development does not require a rezoning or a change in land use *per se*.

The Welgelegen area falls outside the present urban edge of George. The proposed development complies with the George Spatial Development Framework (GSDF) (May 2013), and especially the draft Victoria Bay/Kraaibosch South Local Structure Plan; the main goal of which is to strengthen and promote tourism in the Welgelegen area.⁴⁷

The only existing approved developments (rezoning), besides the Sasol filling station, in the WRMP area is the Welgelegen Estate and the Welgelegen Village

⁴³ COTA TRH 26 59.

⁴⁴ COTA TRH 26 59.

⁴⁵ See COTA TRH 26 39, 49f. The minimum access spacing for a partial access to a service station upstream of an intersection is 100m.

⁴⁶ COTA TMH 16 Vol 2 23.

⁴⁷ See Vrolijk Motivation Report 29ff.

residential townships. The former is presently only sparsely developed whereas there has been no development of the latter.

The Farmers market is a consent use and only operates on Saturdays which is outside of the peak hours for the traffic impact of the proposed development.

Because of the uncertainty regarding the rate of the future development of these townships allowance was made in the TIA, and this addendum, for the future development of these townships within the 5-year horizon by increasing the background traffic by 2.85% per annum in the former and 6% per annum in the latter.⁴⁸

The 6% per annum growth rate correlates with fast growing areas.⁴⁹ The “traffic growth” method is one of two acceptable methods, in terms of the national standards and requirements for TIAs, to make allowance for the increase in background traffic volumes due to possible future development.⁵⁰

In conclusion it can be stated that acceptable allowances have made in the TIAs for the proposed development of portion 278 to comply with the roads master planning for the area as contained in the WRMP.

3.3 Proposed consent use development and peak hour trip generation rates

The proposed development consists of consent uses and a departure.⁵¹

These are only temporary uses and are limited by the present zoning of portion 278 which is Agricultural Zone 1.⁵²

There is no proposed change in land use or land-use rights *per se*.⁵³

⁴⁸ COTA TMH 16 Vol 1 B5.

⁴⁹ COTA TMH 17 Table 1.1.

⁵⁰ COTA TMH 16 Vol 1 B5f.

⁵¹ Vrolijk *Motivation Report* 2f.

⁵² See Sections 18 and 19 of the LUP By-Law and Schedule 1 of the George Integrated Zoning Scheme By-Law, 2017 for permitted consent uses for Agricultural Zone 1 land use.

⁵³ Vrolijk *Motivation Report* 25.

The purpose of the October 2017 TIA was to inform the road authorities, mainly SANRAL, of the expected impact of the proposed development of portion 278 on the existing transportation infrastructure in the vicinity of portion 278.⁵⁴

Traffic impacts are based on estimated peak hour trips generated by the proposed development⁵⁵ and must be done for the combined peak hours of development traffic and background traffic “[that] will result in the highest traffic demand”.⁵⁶

For this reason, the normal weekday morning and pm peak hours were chosen as the peak hours which would produce the “highest traffic demand” for the proposed development and therefore the traffic impact for these hours were accordingly carried out.⁵⁷

The proposed development is aimed predominantly at providing facilities for tourism and contains minimal retail facilities.

Although the proposed development could generate more trips on Sundays and public holidays than during normal weekdays it was considered that these abnormal peak hours would not coincide with the normal peak hours of the background traffic on the N2 highway, especially, and Welgelegen Road—this also applies to Saturday peak hour traffic volumes.

Therefore, it is considered that the combined traffic demand during the Friday pm and Saturday peak hours would be less than the normal weekday peak hours that have been analysed in this report and the TIA.⁵⁸

Furthermore, it is common cause that end of the month Friday pm and Saturday morning peak hours need only be analysed for proposed retail developments or for proposed developments situated in close vicinity to retail areas such as the Garden Route Mall and the Eden Meander.⁵⁹

The latter retail areas are situated 1.5 to 2.3 km from the access to the proposed development and it is therefore considered that they will have minimal impact on the

⁵⁴ See section 38(2)(b) of the National Land Transport Act, 2009.

⁵⁵ COTA TMH 17 13.

⁵⁶ COTA TMH 16 Vol 1 B3.

⁵⁷ See Gray *Traffic Impact Assessment* 3ff.

⁵⁸ Gray *Traffic Impact Assessment*.

⁵⁹ COTA TMH 16 Vol 1 B3.

normal weekday peak hour traffic volumes using the N2 and Welgelegen Road and therefore influence the traffic analyses.

3.4 Existing background traffic and traffic analyses

The MRA considers that the TIA and this addendum should consider background traffic volumes that occur during, presumably, the Friday pm peak hours and Saturday morning peak hours. The Saturday analysis is supposedly necessary to account for the “Farmers market—an existing use”.

The national standards and requirements for TIAs do not provide any trip generation rates for markets and it can therefore be assumed, with confidence, that this type of land use is not considered to be a type of land use that will have an impact on the LOS and capacity of Welgelegen Road and hence an impact on the proposed development of portion 278.⁶⁰

Furthermore, the Farmers market is only a temporary consent use right and will have to be relocated in the future when the extension of the N2 Freeway is constructed.

The present capacity of Welgelegen Road is 1135 passenger car units (pcus) per hour per lane.⁶¹ The predicted year 2024 northbound (am) and southbound (pm) peak hour traffic volumes is 63 pcus per hour per lane (see tables 5 and 6 below). Therefore, the estimated weekday peak hour volume to capacity ratio is 5.6 percent which means that it is estimated that Welgelegen Road will have a spare capacity of 94.4 percent in 2024.

Because of the type of development allowed for the area in terms of the WRMP and the GSDF It is considered that the Friday pm and Saturday morning peak hour traffic volumes and therefore volume to capacity ratios will be less than 5.6 percent.

In the light of the above it was considered unnecessary and unwarranted to carry out traffic analyses of the Friday pm and Saturday morning peak hours for the proposed tourism orientated development of portion 278.

This is especially because the traffic analyses that have been carried out in the TIA, and this addendum, have proved beyond any reasonable doubt that the proposed

⁶⁰ COTA *TMH 17*.

⁶¹ COTA *TMH 17* Table 1.2.

development will have zero impact on the capacity of Welgelegen Road and minimal impact on the capacity of the roundabout on the N2.

The Friday pm and Saturday morning peak hours will not produce any significantly different results.

3.5 Bridge over the Modderrug River linking Welgelegen with Kraaibosch

The possibility of this link being constructed within the next 5 years is very remote as it must be constructed by “future developers”.⁶² It is envisaged that no “future developers” in the Welgelegen area will consider this link vital or necessary for their development since the area already has excellent access to the existing N2 highway. This statement is also valid regarding the proposed future link road to Victoria Bay.⁶³

Furthermore, development contributions initially received from new developments, in terms of the “development cost contribution model”, will firstly have to be used to repay the developer of Welgelegen Estate for the construction costs of Welgelegen Road. These contributions cannot be used for the construction of the bridge over the Modder River until the developers of Welgelegen Estate have been reimbursed their “bridging finance” for the construction of Welgelegen Road.

In any case this link will only impact on the capacity and LOS of Welgelegen Road and the roundabout on the N2 and therefore had to be included in the master planning for the area.

The MRA’s comment in this regard is therefore considered to be subjective and speculative and will have minimal, if any, impact on the traffic impact of the proposed development of portion 278.

This proposed link is not required for the proposed development of portion 278 which is totally dependent on its excellent access to the N2 highway.

4 Existing Traffic volumes

Even though it was considered unnecessary a Sidra traffic analysis of the existing access to portion 282 was undertaken to satisfy the MRA’s concerns in this regard.

⁶² ITS *Welgelegen Development Contributions*.

⁶³ ITS *Welgelegen Development Contributions*.

Manual traffic counts were undertaken at the access during the morning (06h00 till 08h00) and pm (16h00 till 18h00) peak hours on Thursday 25 October 2018, a normal weekday.⁶⁴

The traffic movements are given in figure 5 below and the results of the traffic counts are given in Tables 1 and 2 below.



Figure 5 Traffic movements

Table 1 Existing Morning peak hour traffic volumes

Movement	Volume	Percent Heavies	PHF
2	24	0	0.8
3	8	0	0.8
4	9	0	0.93
6	73	4	0.93
7	85	5	0.88
8	38	0	0.88

⁶⁴ COTA TMH 17 Table 1.5.

Table 2 Existing pm Peak hour traffic volumes

Movement	Volume	Percent Heavies	PHF
2	46	0	0.43
3	0	0	0.0
4	1	0	0.74
6	117	3	0.74
7	105	7	0.87
8	27	4	0.87

5 Traffic analyses

For a description of the methodology used for the traffic analyses see the October 2017 TIA.

To estimate the year 2024 background traffic volumes the existing background traffic volumes were escalated at 6% per annum which is considered an acceptable growth rate for “fast growing areas”.⁶⁵

The traffic volumes used in the analyses are given in tables 3 to 6 below.

Table 3 Year 2019 Morning peak hour Existing traffic plus development traffic

Movement	Existing Volume	Development	Total
2	24		24
3	8		8
4	9		9
6	73	21	94
7	85	48	113
8	38		38

Table 4 Year 2019 Pm peak hour existing traffic plus development traffic

Movement	Existing Volume	Development	Total
2	46		46
3	0		0
4	1		1
6	117	97	214
7	105	64	169
8	27		27

⁶⁵ COTA *TMH 17* Table 1.1.

Table 5 Year 2024 morning peak hour traffic volumes including development

Movement	Existing Volume	Development	Total
2	32		32
3	11		11
4	12		12
6	98	21	119
7	114	48	162
8	51		51

Table 6 Year 2024 pm peak hour traffic volumes including development

Movement	Existing Volume	Development	Total
2	62		62
3	0		0
4	1		1
6	157	97	254
7	141	64	205
8	36		36

6 Results of traffic analyses

The traffic analyses have been done by EFG Engineers (Pty) Ltd using the SIDRA traffic simulation suite of programmes (version 7.0). A summary of the results of the traffic analyses are given below.

Table 7 Summary of Sidra results

AM PEAK HOUR												
Movement	2018 Exist				2019 Exist + Dev				2024 Exist + Growth + Dev			
	v/c	Ave Delay (s)	LOS	95% Q (m)	v/c	Ave Delay (s)	LOS A	95% Q (m)	v/c	Ave Delay (s)	LOS	95% Q (m)
South: from N2												
Through	0.07	0.0	A	2.3	0.08	0.0	A	2.9	0.12	0.0	A	4.2
Right Turn	0.07	5.7	A	2.3	0.08	5.7	A	2.9	0.12	5.8	A	4.2
Approach	0.07	4.0	NA	2.3	0.08	4.3	NA	2.9	0.12	4.4	NA	4.2
East: from Sasol												
Left Turn	0.06	8.3	A	1.7	0.07	8.3	A	2.2	0.09	8.3	A	2.9
Right Turn	0.01	8.8	A	0.3	0.01	9.0	A	0.3	0.02	9.7	A	0.5
Approach	0.06	8.3	A	1.7	0.07	8.4	A	2.2	0.09	8.5	A	2.9
North: from Welgelegen												
Left Turn	0.02	5.6	A	0.0	0.02	5.6	A	0.0	0.03	5.6	A	0.0
Through	0.02	0.0	A	0.0	0.02	0.0	A	0.0	0.03	0.0	A	0.0
Approach	0.02	1.4	NA	0.0	0.02	1.4	NA	0.0	0.03	1.4	NA	0.0
All Vehicles	0.07	5.0	NA	2.3	0.08	5.3	NA	2.9	0.12	5.3	NA	4.2

PM PEAK HOUR												
Movement	2018 Exist				2019 Exist + Dev				2024 Exist + Growth + Dev			
	v/c	Ave Delay (s)	LOS A	95% Q (m)	v/c	Ave Delay (s)	LOS A	95% Q (m)	v/c	Ave Delay (s)	LOS A	95% Q (m)
South: from N2												
Through	0.08	0.0	A	2.7	0.02	0.0	A	0.0	0.02	0.0	A	0.0
Right Turn	0.08	6.0	A	2.7	0.12	6.0	A	4.4	0.16	6.1	A	5.7
Approach	0.08	4.7	NA	2.7	0.12	5.2	NA	4.4	0.16	5.2	NA	5.7
East: from Sasol												
Left Turn	0.12	8.6	A	3.8	0.23	8.7	A	7.6	0.28	8.9	A	9.7
Right Turn	0.00	9.3	A	0.0	0.00	10.0	A	0.1	0.00	10.8	B	0.1
Approach	0.12	8.6	A	3.8	0.23	8.7	A	7.6	0.28	8.9	A	9.7
North: from Welgelegen												
Left Turn	0.06	5.6	A	0.0	0.06	5.6	A	0.0	0.07	5.6	A	0.0
Through	0.06	0.0	A	0.0	0.06	0.0	A	0.0	0.07	0.0	A	0.0
Approach	0.06	0.1	NA	0.0	0.06	0.1	NA	0.0	0.07	0.1	NA	0.0
All Vehicles	0.12	5.0	NA	3.8	0.23	5.9	NA	7.6	0.28	5.9	NA	9.7

From these results, it can be stated with authority that the proposed development will have, as anticipated, zero impact on the LOS and capacity of Welgelegen Road.⁶⁶

⁶⁶ See COTA TMH 16 Vol 2 9f for minimum capacity analysis standards.

The only traffic stream that will have a LOS of less than A is the right turn movement exiting the existing approved access which has a LOS of B; this is still well above the minimum LOS of D that may require mitigating measures.⁶⁷

The full results of the Sidra analyses can be made available on request.

7 Summary and conclusions

On 23 October 2017 application was made to the George Municipality for a proposed tourist development on portion 278 of the Farm Kraaibosch 195. The application, in terms of legislation, included a comprehensive TIA.

Initial comments on the TIA were received from the DCES on 8 March 2018 and further comments from the DCES were received on 24 May 2018.

On 9 July 2018 the proposed application was submitted to SANRAL; the road authority whose existing transportation infrastructure was most affected by the proposed development.

On 2 September 2018 SANRAL notified the applicant that it unconditionally approves the proposed development and by implication the TIA.

Because of the conflicting opinions of the two roads authorities regarding the TIA this addendum to the TIA has been prepared to address the issues raised by the MRA.

The MRA is mainly of the opinion that the existing approved access to the filling station is substandard and believes an alternative access must be provided.

In the light of this addendum it has been conclusively proved that the present approved access is not substandard as regards the most important traffic safety requirement for accesses to properties.

The MRA therefore has no legitimate or justifiable right to require that an alternative access be provided to portions 282 and 278.

This addendum has also addressed and proved that the concerns raised by the MRA in its critique of the TIA are unfounded and unsubstantiated.

⁶⁷ See COTA TMH 16 Vol 2 9f for minimum capacity analysis standards

When comparing the results of the traffic impact analyses with the national standards it can be stated with confidence that the proposed developments (consent uses and departure) applied for portion 278 will have zero impact on the capacity and LOS of Welgelegen Road.

8 Recommendations.

As the proposed consent uses and departure for portion 278 will have an insignificant impact on the existing transportation infrastructure in the area it is recommended that:

1. The proposed consent uses, and departure be approved without any mitigating measures.

Bibliography

Books, journals and articles

1. Badenhorst P J, Pienaar J M and Mostert H *Silberberg and Schoeman's The Law of Property* 5th edition (LexisNexis Butterworths Durban 2006)
2. Committee of Transport Officials (COTO) *South African Traffic Impact and Site Traffic Assessment Manual, TMH16 Volume 1*, (SANRAL Pretoria, 2012).
3. Committee of Transport Officials (COTO) *South African Traffic Impact and Site Impact Assessment Standards and Requirements Manual TMH 16 Volume 2* (SANRAL Pretoria, 2014)
4. Committee of Transport Officials (COTO) *South African Road Classification and Access Management Manual, TRH 26*, (SANRAL Pretoria, 2012).
5. Committee of Transport Officials (COTO) *South African Trip Data Manual TMH 17* (SANRAL Pretoria, 2013).
6. Gray PJ Traffic Impact Assessment October 2017.
7. ITS Engineers (Pty) Ltd *Road Based Development Contributions for the Welgelegen Area in George* Letter dated 5 August 2006.
8. Kantey and Templer *George Roads Master Plan* June 2006.
9. Vrolijk J *Motivating Report: Consent uses and Departure: Portions 278 and 282 of the farm Kraaibosch 195. George* September 2017.
10. Western Cape Government *Access Management Guidelines (Draft)* July 2016.

Legislation

1. National Land Transport Act, 2009.
2. The South African National Roads Agency Limited and National Roads Act, 1998
3. George Integrated Zoning Scheme By-Law, 2017.
4. Land-use Planning By-law for George Municipality (2015).

Kraaibosch 195/282, George
298 278

Marina Welman

Thu 2018/03/08 3:23 PM

To: janvrolijk@vodamail.co.za <janvrolijk@vodamail.co.za>;

Good Afternoon Jan

Herewith the comments from CES and ETS for your information and feedback.

CES : Alternative access must be provided as existing **garage access is substandard** in terms of spacing from circle.

ETS : Application for an electrical supply to be submitted.

Please feel free to contact Jeanne should you require **any further information**.

Regards
Marina

Annexure B

From: Lindsay Mooiman [mailto:LCMOOIMAN@george.gov.za]

Sent: Thursday, 24 May 2018 9:49 AM

To: pgray@telkomsa.net

Cc: Lionel Daniels <rldaniels@george.gov.za>; Ricus Fivaz

<Jmfivaz@george.gov.za>; Delia Power <Dpower@george.gov.za>; Reggie Wesso <rwesso@george.gov.za>

Subject: FW: TIA Sasol Garage Development

Good morning Peter

I have had a look at the TIA and wish to make preliminary comments as follows:

- 1 Par 7 – The access to the proposed development is the most important consideration as it is situated within the municipal road reserve and is not within the guideline parameters its access spacing. While the history is known to the applicant and various authorities, this is still to be addressed in the TIA, together with other relevant elements eg. stacking distances.
- 2 George Municipality has a road master plan that clearly includes a future Southern by-pass, a portion which was constructed with the development of the Welgelegen Estate. The road was constructed to its final alignment and will in future cross the Modderrug River and link to the Kraaibosch area roads. A general roads master plan was also concluded for the Welgelegen area (area bordered by Kraaibosch - N2 - Modderrug River) that included an access spacing study. All future development in this area will be required to adhere to this roads planning. Any TIA submitted must take into account the future road network and the traffic generated. The TIA submitted makes no reference to this important future link.
- 3 Par 3.1 Proposed Land Uses and Trip Generations
The proximity to 2 regional shopping/retail facilities (Garden Route Mall and Eden Meander) - a trip destination for non-local traffic – is not mentioned or accounted for.
- 4 Traffic Volumes were measured on a Tuesday and Wednesday (26 and 27 September 2017) and it is requested that Friday and Saturday (Farmers market – an existing use) be considered as well.

- 5 Par 5.3 The 5-year Horizon has been considered without including the Welgelegen-Kraaibosch road link. There are expectations that the link will soon become a necessity given the rate of development in the Kraaibosch area.

Regards

Lindsay

Reference: W11/4/3-2/7-45 Fax Number: +27 (0) 21 910 1699
Date: 3 September 2018 Direct Line: +27 (0) 21 957 4618
Email: dyers@nra.co.za Website: www.nra.co.za



Mr J. Vrolijk
Jan Vrolijk Town Planner
PO Box 710
GEORGE
6530

Dear Mr Vrolijk

NATIONAL ROUTE 2 SECTION 7: PROPOSED CONSENT USE AND DEPARTURE FOR PORTIONS 278 AND 282 OF THE FARM KRAAIBOSCH 195, GEORGE.

Your letter dated 9 July has reference.

The South African National Roads Agency SOC Limited (SANRAL) approved your application in terms of section 49 of the South African National Roads Agency Limited and National Roads Act, 1998 (Act 7 of 1998), subject to the following conditions:

1. The development as indicated on the Site Development Plan, dated August 2017, with drawing number 282-01, is hereby approved.
2. Prior to the approval of a general plan over that portion of the layout relating to sites adjoining the national road, where minor changes are required, the layout may be amended with approval of the SANRAL.
3. For the purpose of paragraph 2 above, "minor changes" shall mean changes that entail amendments to the layout to accommodate engineering design issues such as the swapping of a turning head from one side of the road to another, the relocation of a panhandle, the change of shape of a turning circle, the opening of a storm water lane, the upgrading of a foot path to a road, the shortening or lengthening of a cul-de-sac, the re-alignment of a road or a site boundary for topographical reasons, the rationalisation of site boundaries to accommodate cut and fill banks for roads and site platforms, as well as amendments to accommodate local survey modifications arising from the rationalisation of survey pegs to accommodate existing structures, fences, infrastructure and/or other topographical features.
4. A permanent 2m high brick wall/fence must be erected on the boundary of the land development area and the national road reserve. Detailed plans of the proposed wall must be submitted to the SANRAL for approval prior to the erection thereof. The maintenance of the wall will be the responsibility of the property owner/successor in title/Home Owners Association.
5. Where substantial amendments to that portion of the layout relating to sites adjoining the national road are required, the written approval of the SANRAL shall be required.

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Reg. No. 1998/005684/10

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