

TRAFFIC STATEMENT

Re-alignment, Rehabilitation and Upgrading of SANParks TMNP Picnic/ Braai Site, Tokai

1 Introduction

Arup Transport Planning was appointed by EPLA Consulting cc landscape architects and environmental planners to conduct a traffic impact study for the proposed re-alignment, rehabilitation and upgrading of the SANParks Table Mountain National Park (TMNP) Tokai picnic/ braai site along Tokai Road for the purpose of establishment and rehabilitation of an ecological corridor to link lower to upper Tokai in terms of the approved Tokai and Cecilia Management Framework.

The preferred alternative will partially replace areas of the existing picnic/ braai site and this traffic statement relates to the existing and projected road conditions and traffic considerations adjacent the site boundaries, in order to:

- Inform the current planning process in terms of two vehicular site access points.
- Provide a TIS for submission as part of the Basic Assessment Report.

EPLA Consulting cc is preparing a baseline information report, concept planning proposals for re-alignment of the site for comment by the relevant stakeholders and for the public information process, and final detailed landscaping plans to be submitted to the relevant authorizing body.

The current access to the picnic/ braai site is on Tokai Road approximately 870m to the west of the Orpen Road/ Tokai Road/ Steenberg Road roundabout.

2 Existing Situation

The local road network is indicated on Figures 1 and 2 and briefly discussed below:

Tokai Road



Tokai Road between Orpen Road and Zwaanswyk Road is a Class 5 two lane residential access collector and provides access to Steenberg, Steenberg Residential Golf Estate and Forest Glade residential area.

A sidewalk has been provided on the northern side, between Steenberg Road and the Forest Glade access to accommodate pedestrians. Beyond the Forest Glade access, there are no formal Non Motorised Transport (NMT) facilities.



Zwaanswyk Road / Tokai Road intersection is a three-way (1x1) with stop control on eastbound Tokai Road and northbound Zwaanswyk Road. Westbound Tokai Road is uncontrolled.

“Tokai Road Extension” between Zwaanswyk Road past the braai/ picnic site is a narrow two lane access road (±4m wide). It is a private road under the management of the TMNP. The road provides access to the Tokai picnic/ braai site, Cape Research Centre, Tokai Manor House, Arboretum, MTB & hiking trails, Chrysalis Academy & the Porter Estate.

3 Existing Traffic Conditions

The existing daily car and person volumes accessing the Tokai braai/ picnic site were available from the Tokai and Cecilia Ranger of the Table Mountain National Park. Data for the latest two year period October 2007 to September 2009 was used.

The data is summarized in the Tables by period below.

Weekend & Public Holidays Daily Volumes Year 1 (Oct 07 – Sep 08)

| | Visitors | Cars | Average Occupancy |
|------------------------------------|----------|------|-------------------|
| Saturdays | | | |
| Average | 479 | 146 | 3.3 |
| Maximum | 1365 | 401 | 3.4 |
| Sundays | | | |
| Average | 808 | 280 | 2.9 |
| Maximum | 3157 | 951 | 3.3 |
| Public Holidays¹ | | | |
| Average | 1153 | 367 | 3.1 |
| Maximum | 2437 | 827 | 2.9 |

Note 1: 16th, 25th, 26th December, 1st January, 21st March, Easter, 27th April, 1st May, 16th June, 9th August, 24th September.

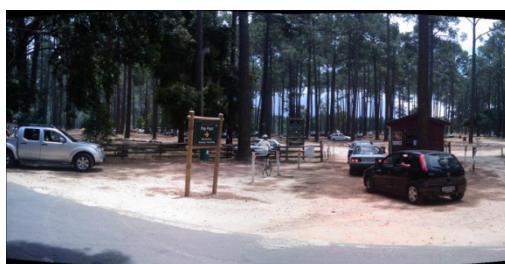
Weekend & Public Holidays Daily Volumes Year 2 (Oct 08 – Sep 09)

| | Visitors | Cars | Average Occupancy |
|------------------------------------|----------|------|-------------------|
| Saturdays | | | |
| Average | 329 | 100 | 3.3 |
| Maximum | 1851 | 534 | 3.5 |
| Sundays | | | |
| Average | 559 | 186 | 3.0 |
| Maximum | 1966 | 670 | 2.9 |
| Public Holidays¹ | | | |
| Average | 583 | 193 | 3.0 |
| Maximum | 1748 | 623 | 2.8 |

Note 1: 16th, 25th, 26th December, 1st January, 21st March, Easter, 27th April, 1st May, 16th June, 9th August, 24th September.

It can be deduced that the highest volume of visitors to the Tokai braai/ picnic site are occurring on a Sunday with an average of 808 visitors and 280 vehicles during Year 1 and 559 visitors and 186 cars during Year 2 as indicated above. The highest volume on a Sunday over the two year period was recorded on 30th March 2008 with a maximum of 3157 visitors and 951 vehicles accessing the site. From the beginning of 2009, a 'No Alcohol' and 'No Music' policy has been enforced and a slight drop in visitor numbers has been experienced.

Visual observations of the traffic operations and volumes on Tokai Road and at the access point were conducted at noon on Sunday, 6th December 2009 during the weekend peak time. The number of visitors to the site during a weekend is primarily dependant on the weather. The weather on Sunday, 6th December was favorable however the number of visitors did not adversely effect the operation of Tokai Road.



Sunday, 6th December 2009 ±12:00
No queues were observed on Tokai Road.

During extreme or very busy days (which only occur a few days a year), the traffic queue as a result of the activities at the site extends back to the Library on Tokai Road (approximately 1.7km from picnic site entrance) however, these days are deemed 'abnormal' and a specific Traffic Management Plan will need to be in place to cater for these 'abnormal' high volumes of visitors. In addition, vehicles queuing to enter the picnic site can cause traffic congestion on Tokai Road.

Some public holidays during the year also contribute to extreme traffic experienced on these days; Day of Reconciliation (16th December), Easter Sunday, Heritage Day/ National Braai Day (24th September) to name a few. The 24th September 2008 experienced the highest daily volume (2437 visitors and 951 vehicles) for public holidays, but on 24th September 2009 the following year received 1748 visitors in 623 vehicles. This drop in numbers could be attributed to the 'No Alcohol' and 'No Music' restriction from January 2009.

The average occupancy during the weekends and public holidays based on the data used equates to 3.1 persons per vehicle.

4 Existing Road Pavement

4.1 Overview

The existing 'Tokai Road Extension' is a private road, with approximately 4m wide surfacing between Zwaanswyk Road and the Prinskasteel River Bridge. The road is considered very narrow for safe two-way traffic operations and it is recommended that the roadway be widened and resurfaced to 6m. The existing road pavement is also in a very poor condition exhibiting numerous modes of distress such as deformation, cracking and disintegration of the surfacing.



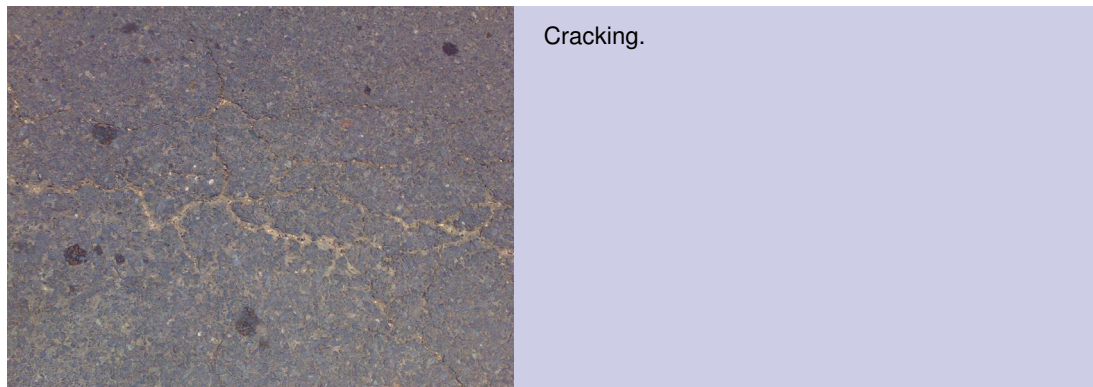
Edge of roadway along Tokai Road in the vicinity of the braai/ picnic site in disrepair do to vehicle usage.



Pavement edge breaking up.



Potholes.



Tokai Road is a public road to where it enters TMNP property (Zwaanswyk Road intersection); thereafter it becomes a private road under the management of TMNP. TMNP and MTO Forestry Pty (Ltd) have an agreement with the Provincial Administration regarding the maintenance of Tokai Road within the Tokai Plantation.

The speed limit along this section of Tokai Road is unsigned which means a maximum speed of 60km/h is permitted. It is recommended that this could be reduced and signed at 40km/h.

4.2 Proposed Improvements

Whilst a full road pavement rehabilitation assessment does not form part of this study, it is recommended that the road be upgraded with concrete edging on both sides, the pavement layers checked for adequacy and widened to 6m and resurfaced with an appropriate bituminous wearing course. Further, it is recommended that 2.5m gravel shoulders be formalised for informal parking and NMT users.

A proposed cross section of the 'Tokai Road Extension' is shown in Figure 3. The remaining 5m of verge is contained within the current 16m road reserve where the existing tree line will be retained where possible. At worse, it may be necessary to trim some of the trees back to accommodate the new cross section.

The Heritage Study (2006) extract regarding Tokia Road has been contemplated and it is our opinion that the proposed improvements contained in this report do not clash with the heritage requirements.

4.3 Stormwater

There is no formal stormwater system along Tokai Road and rain water generally flows toward the permeable verges and dissipates into the plantation.

5 Conceptual Site Layout – Alternative 1

5.1 Concept Layout

The preferred concept site layout is shown in Figure 4.

5.2 Proposed Visitor Capacity

The proposed upgrade of the site is for a maximum visitor capacity of up to 2000 day visitors on peak days plus an extra 500 visitors to the picnic only site phase.

In the last two years, the site deals with a maximum peak of nearly 3200 visitors on a typical weekend day. At 16h00, the gates to the braai/ picnic site are closed and adhoc parking occurs on the verge on Tokai Road. Using the average occupancy as indicated in Section 3, 2500 visitors equates to approximately, on average, 806 vehicles.

6 Site Access Assessment

6.1 Status Quo (Option 1)

The vehicle access to the braai/ picnic site is currently gated with booms and entrance hut which is operated by the gate management service provider. Visitors to the site must pay a permit fee on arrival at the boom gates to the access agency staff. A single entry and exit lane currently exists. On extreme busy days, both entry and exit lanes are used to enter the site which is manned by 2 or 3 access agency staff. Queues are sometimes experienced on entry into the braai/ picnic site which could be attributed to the manual handling of cash payment for permits (human factor).



Entry point with booms and manual payment system.



Exit point with booms.

6.2 Alternative Site Access (Option 2)

The preferred concept site layout (Alternative 1) for the re-alignment, rehabilitation and upgrading of the Tokai picnic/ braai site is shown in Figure 4. The existing access and pay point is to remain. The existing hut will remain as is and there is no plan to replace this structure as part of this project. The ‘human factor’ of handling the cash will remain in place as the gate house will be manned at all times. A schematic layout of the existing entrance and proposed entrance with the gate house is shown in Figures 5 and 6.

It is proposed that the entire length of Tokai Road from Zwaanswyk Road to the Prinskasteel River Bridge be widened and re-surfaced with a 6m roadway width. To mitigate the formation of long queues during ‘abnormal’ days, it is recommended that a second entry lane be implemented and manned. This increases the service rate and will reduce queue lengths. Queues may develop that back up into Tokai Road, but this is considered abnormal, occurring perhaps on 2 – 3 extreme peaks per year and passing lanes on Tokai Road are not considered necessary for the normal weekend operations.

6.3 Access Opposite Cape Research Centre (Option 3)

An alternative access opposite the Research Centre Access could also be considered with the same entrance configuration as for Option 2. A new two-way 5m wide road could be constructed from the access to the closest point of the internal track along the shortest route, reducing costs to some extent.

6.4 Emergency Services (Fire & Rescue, Medical, Police etc.)

It is suggested that emergency access points be confirmed and included in the Concept Site Layout and that a Health & Safety specialist as well as a Fire Prevention and Fire Control specialist be consulted. The main entry and exit lanes are recommended at 4m wide to accommodate emergency services vehicles. Should a structure over the access be considered, due cognisance should be taken of the height of emergency service vehicles.

7 Parking Assessment

7.1 Existing Parking

There is no dedicated parking area in the site and parking is generally ad-hoc under the existing pine trees. Ad-hoc parallel parking also occurs outside the site on 'Tokai Road Extension' verges if visitors arrive after the gates close at 16h00 or at peak times when the vehicle access is congested.

7.2 Proposed Parking

A number of cluster parking areas have been indicated on the Concept Site Layout. To optimise parking areas, they need to be marked out conceptually to confirm a total of 806 vehicles can be accommodated (this assumes an average occupancy of 3 passengers per vehicle).

8 Public Transport Services

In terms of the National Land Transition Act (NLTTA) (Act No 22 of 2000), section 29; it is a requirement that an assessment of the public transport be included in traffic impact assessments. The following comments are relevant in respect to the public transport availability at the proposed site.

The Tokai braai/ picnic site is located in close proximity to Orpen Road where the occasional minibus taxi and bus service frequent. Formal bus shelters and bus stops are located along Tokai Road from the Orpen Road circle eastwards. No formal taxi facilities are provided in the area.

No specific public transport recommendations are made in relation to this development at this point in time.

The access and internal road tracks should be designed to accommodate the access and parking of chartered bus services bringing groups to the Tokai picnic/ braai area. Alternative bus/ coach parking should be provided in designated areas.

9 Non Motorised Transport (NMT) Activities

There are no formal NMT facilities in the vicinity of the site along Tokai Road. Pedestrians walk on gravel verges on both sides of Tokai Road. A portion along Tokai Road between Zwaanswyk Road to the Orpen Road Circle has some NMT facilities.

There are many cyclists that cycle along Tokai Road to access the MTB Trails and the current roadway is narrow as well as in a poor condition.



Lack of NMT facilities along Tokai Road in the vicinity of the site.

Narrow road way width and poor pavement condition.



Some NMT facilities further down Tokai Road towards Orpen Road circle.

It is recommended that after 'Tokai Road Extension' has been rehabilitated to 6m wide that at least 2.5m wearing course gravel verges be installed to function as a route for pedestrians and cyclists (predominantly mountain bikes) as well as for parking during extreme peaks and when there is a demand for 'spill over' parking not accommodated within the Picnic/ Braai Site. The NMT volumes are very low and cyclists will generally ride on the road. An attractive alternative MTB trail adjacent to but away from 'Tokai Road Extension' could be considered.

10 Summary and Recommendations

The objective of this traffic statement was to assess the impact and access requirements of the proposed re-alignment, rehabilitation and upgrading of the Tokai picnic/ braai site in Tokai. The following comments and recommendations are made:

1. The SANParks Table Mountain National Park (TMNP) Tokai picnic/ braai site is located adjacent Tokai Road in Tokai. The section of Tokai Road from the Zwaanswyk Road turn-off west up towards the Tokai Manor falls within the TMNP reserve and is not a municipal road.
2. The proposed upgrade of the site is for a maximum visitor capacity of 2500 day visitors which equates to approximately, on average, 806 vehicles.
3. 'Abnormal' visitor days may exist 2 – 3 days per year whereby a specific Traffic Management Plan should be in place to cater for these 'abnormal' high volumes.
4. The existing road pavement is in a poor condition and it is recommended that a full pavement rehabilitation assessment be undertaken and that the road be upgraded with concrete edging on both sides, the pavement layers checked for adequacy, widened to 6m and appropriately resurfaced with 2.5m gravel shoulders for informal parking and NMT users. Whilst this is a recommendation only and not a requirement, the upgrade of this stretch of road is of great necessity and needs to be addressed and delivered in a phased approach based on the long term planning for the area.

5. It is recommended that Option 2 be the preferred site access. However, the access opposite the Cape Research Centre (Option 3) will in the long term be a preferable site but in terms of this upgrade and realignment of the braai and picnic site, Option 2 is recommended.
6. The internal parking of the site should be able to accommodate a total of 806 vehicles (assuming an average occupancy of 3 passengers per vehicle).
7. The proposed 2.5m wearing course gravel verges will function as a route for pedestrians and cyclists as well as for parking during extreme peaks and to accommodate 'spill over' parking from the braai/ picnic site.
8. No specific public transport recommendations are made in relation to this development however it is recommended that alternative bus/ coach parking should be in designated areas within the formally designated parking in the site.

Provided that the above recommendations are adhered to, the re-alignment, rehabilitation and upgrading of the Tokai picnic/ braai site can be supported from a traffic engineering perspective.