



Appendix C Traffic Impact Assessment

PROPOSED MIXED USE ZONE

5 CARLTON GORE ROAD

GRAFTON

TRAFFIC IMPACT ASSESSMENT

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1.0 INTRODUCTION

This report examines and describes the traffic and parking effects of a proposal to rezone a site from Residential 7B to Mixed Use at 5 Carlton Gore Road in Grafton. The report specifically describes the existing traffic environment, estimated traffic generation, parking, vehicle access, the traffic effects of the proposal and an assessment against the relevant District Plan criteria. The existing activities on the site comprise some 1,670m² of office space and 46 parking spaces. The existing activities on the site will not change as a result of the proposed rezoning.

The site is located on the southern side of Carlton Gore Road at its intersection with Arotau Place. Vehicles typically enter the site from Carlton Gore Road and exit onto Arotau Place.

By way of a summary of the detail contained within this report, it can be stated that the traffic planning effects of the proposal to rezone the site from residential to business can be accommodated on the road network without compromise to its function, capacity or safety.

2.0 EXISTING TRAFFIC ENVIRONMENT

2.1 The Road Network

Carlton Gore Road is classified as a Local Road in the District Plan. The function of these roads is to provide for property access. In the vicinity of the site it provides one traffic lane in each direction together with on-street parking.

There are no recent traffic counts available for the part of Carlton Gore Road that fronts the site. Given its location and function in the road network, it is estimated that Carlton Gore Road carries in the order of 3,000 vehicles per day. Peak hour traffic flows would be in the order of 300 vehicles per hour.

Arotau Place is classified as a Local Road and provides two-way traffic flow together with on-street angle parking. Traffic flows on Arotau Place would be in the order of 250 vehicles per day with peak hour traffic flows of up to 40 vehicles per hour.

The intersection of Carlton Gore Road and Arotau Place is a Give Way controlled priority "T" intersection.

2.2 Traffic Safety

Information from the Land Transport Safety Authority's "Accident Investigation System" for the five year period, January 1999 to December 2003, indicates that two crashes have been reported on Carlton Gore Road between Grafton Road and Seafield View Road. One crash involved a vehicle losing control and one involved a vehicle being hit by an overtaking vehicle.

Overall, the crash history does not indicate a traffic safety problem on this part of Carlton Gore Road.

3.0 TRAFFIC GENERATION

3.1 Existing Office Activity

The existing site activities include an office with a GFA of some 1,670m². Traffic generation rates contained within the Transfund New Zealand publication "Trips and Parking Related to Land Use" and the RTA publication "Guide to Traffic Generating Developments", indicate that traffic generation of office activities is in the order of 10 traffic movements per 100m² of GFA per day with peak hour traffic generation of 2 traffic movements per 100m² of GFA per hour.

Given the above, the existing office activity on the site would generate in the order of 170 traffic movements per day with peak hour traffic generation of up to 35 traffic movements per hour.

3.2 Proposed Mixed Use Zone

The traffic generation of the proposed Mixed Use zone will depend on the activities likely to be established. The provisions of the Mixed Use zone allows a range of residential and commercial activities including retail (up to 500m² permitted) and offices. The basic floor area ratio for the Mixed Use Zone is 2:1 which, with a site area of 1,754m², would permit a GFA of approximately 3,500m². This is approximately twice the GFA of the existing building on the site.

To determine the potential traffic generation of a development on the site with a Mixed Use zone, a development has been assumed comprising 500m² of retail area and 3,000m² of office space. Given the range of activities permitted within the Mixed Use Zone, a development of this nature would have among the highest traffic generating potential.

Using traffic generation rates contained within the Transfund New Zealand publication and the RTA publication, Table 1 indicates the likely traffic generation of a permitted commercial development under the provisions of a Mixed Use Zone.

Table 1 – Mixed Use Zone Estimated Traffic Generation

Activity	Size	Daily Trip Rate (per 100m ² of GFA)	Daily Traffic Generation	PM Peak Hour Traffic Generation
Retail	500m ²	50	250	40
Office	3,000m ²	10	300	60
TOTAL	3,500m ²		550	100

4.0 PARKING

4.1 District Plan Requirements

Clause 12.8.1.1 of the District Plan indicates the parking requirements for various activities. Table 2 indicates the parking requirements for the existing mix of activities on the site.

Table 2 – District Plan Parking Requirements

Activity	GFA	Rate	Requirement
Office	1,680m ²	1 / 40	42.0
TOTAL			42.0

Any redevelopment of the site would need to comply with the relevant provisions of the District Plan and the Mixed Use Zone in relation to the provision of on-site parking.

4.2 Parking Provided

There are currently 46 parking spaces provided on the site for the existing activities. This parking provision exceeds that required for the current commercial use of the site.

5.0 VEHICLE ACCESS

Vehicle access to the existing parking spaces provided on the site occurs via an existing entry vehicle crossing provided to Carlton Gore Road and an exit vehicle crossing to Arotau Place. In considering vehicle access to a site, it is important that:

- adequate sight distance is provided, and
- the access is designed to ensure safe traffic movement.

5.1 Sight Distance

The appropriate standard is the Land Transport Safety Authority publication "Guidelines for Visibility at Driveways". There are two components to the sight distance measurement. The first being the Sight Distance requirement and the second being the Lines of Clear Sight. The sight distance / lines of clear sight required is dependent upon the traffic generation of the proposal, the 85th percentile speed of vehicles on the frontage road and also the classification of the frontage road. The sight distances available exceed that recommended in the guideline and are therefore considered to be acceptable.

5.2 Vehicle Access Design

The existing vehicle access arrangements will remain unchanged and are considered to be acceptable in relation to the proposed rezoning. Any redevelopment of the site under the Mixed Use zone provisions may need to alter the current vehicle access arrangements.

6.0 TRAFFIC EFFECTS OF PROPOSAL

The main effect on the road network associated with the proposed Mixed Use zone will be that associated with the traffic generating potential of the site.

The estimated traffic generation of the existing activities on the site is in the order of 170 traffic movements per day with peak hour traffic generation of 35 traffic movements per hour. A possible development under a Mixed Use scenario could be expected to generate up to 550 traffic movements per day with peak hour traffic generation of up to 100 traffic movements per hour.

The greatest effect on the road network will occur as a result of vehicles turning right into the site. Vehicles turning right into the site from Carlton Gore Road have the potential to delay other traffic on Carlton Gore Road. It is noted that this part of Carlton Gore Road is classified as a Local Road and has the function of providing for property access. While a redevelopment of the site would result in an increase in vehicles turning right into the site, the effects of vehicles being delayed is not considered to be significant.

Vehicles exiting the site onto Carlton Gore Road and Arotau Place have very good sight distance available which minimises the potential for adverse traffic safety effects.

Vehicles gaining access to the site would most likely pass through the intersections of Grafton Road and Carlton Gore Road, Carlton Gore Road and Park Road as well as Claremont Street and Khyber Pass Road. Given the existing levels of traffic using these intersections and the potential level of additional traffic generated by the proposal, the three intersections would be expected to operate at a satisfactory level of performance and remain within their overall traffic carrying capacity although delays may increase slightly.

Overall, it is considered that the estimated levels of additional traffic generated by a development complying with the provisions of a Mixed Use zone on the subject site can be accommodated on the road network without compromising its function, capacity or safety. On this basis, the effects of the proposal are no more than minor.

7.0 DISTRICT PLAN ASSESSMENT CRITERIA

The Auckland City District Plan sets out a number of traffic related assessment criteria for resource consent applications. These are:

- *Accessibility of the site.*

The site can be easily accessed via the arterial road network.

- *Current traffic problems in the area eg high accident location.*

Analysis of the crash history does not indicate a traffic safety problem in the area that would be exacerbated by the proposal.

- *Existing and probable future traffic volumes on adjacent roads.*

Existing traffic flows on the part of Carlton Gore Road where the site is located are in the order of 3,000 vehicles per day. The nature of the street network in the area will mean that traffic volumes are unlikely to increase significantly in the future.

- *Ability of the adjacent existing or planned roading systems to handle increased traffic and the feasibility of improving the roading system to handle the increased traffic volume.*

The estimated additional traffic generated by a development complying with the provisions of the Mixed Use zone would be in the order of 380 traffic movements per day and 65 traffic movements per hour in the peak hour. Given the permeability of the road network in the area, this level of additional traffic can easily be accommodated without the need to undertake any road improvement works.

- *Traffic congestion and pedestrian/vehicle conflict likely to be caused by the proposal.*

There is good inter-visibility between pedestrians who may be walking along the footpath on Carlton Gore Road and Arotau Place and vehicles entering/exiting the site. This minimises the potential for pedestrian/vehicle conflict to occur.


- *Vehicle access to and from the site must:*
 - *ensure adequate sight distances and prevent congestion caused by ingress and egress of vehicles.*
 - *be sufficiently separated from pedestrian access to ensure the safety of pedestrians.*

Adequate sight distance is available or can be provided from the vehicle access points to ensure that traffic safety problems are unlikely to occur associated with vehicles entering or exiting the site.

Overall, a development complying with the provisions of the Mixed Use zone is considered to be consistent with these assessment criteria.

8.0 CONCLUSIONS

Based on the analysis described in this report, it is concluded that the traffic and parking effects of the proposal to rezone the site at 5 Carlton Gore Road in Grafton from Residential 7A to Mixed Use can be accommodated on the road network without compromising its function, capacity or safety. Therefore the effect of the proposal is considered to be less than minor.



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