Technical Note

By:	John Row	**Date:**	1 September 2016
Subject:	Peer Review - Cranford Basin Rezoning Transport Assessment	**Our Ref:**	4394747

Christchurch City Council (CCC) have commissioned QTP to prepare a Transport Assessment of the effects on the transportation network of rezoning the Cranford Basin to urban uses. This technical note is a review of this work, and I have used the following documents in this review:

- Statement of Evidence of Timothy John Wright on Behalf of Christchurch City Council – Transport, 10th December 2015;
- QTP memo titled Cranford Basin Proposed Rezoning Transport Assessment, 2nd April 2015;
- QTP memo titled Cranford Basin Submissions Transport Modelling and Access Review, 1st December 2015; and
- Cranford Basin Rural Zoning Transport Evidence – Cranford Street / Case Access Intersection Modelling, 9th December 2015

Trip Generation and Distribution

Although QTP have assessed six scenarios with different levels of residential and/or commercial development, the scope of this review is restricted to two scenarios with 485 and 750 L1 low density households (scenarios 2 and 6).

The assumed trip generation rates and total additional trips for the AM and PM periods are shown in **Table 1**.

Table 1: Assumed trip generation rates and total trips

	AM		PM		2-Way	
	From	To	From	To	AM	PM
Trip Rates (trips/Hhld)	0.76	0.31	0.46	0.72	1.07	1.18
Scen 2 Trip Totals (trips) – 750 Hhlds	570	233	345	540	803	885
Scen 6 Trip Totals (trips) – 485 Hhlds	369	150	223	349	519	572

QTP report that the trip generation rates used (reported in **Table 1**) are reflective of 85th percentile rates in a combination of sources, including the NZ Trips Database, NZTA Research Report 453, NSW RTA Guide to Traffic Generating Developments and previous ITA's.

Consistent with 85th percentile generation rates, these trip generation rates are at the high end of the acceptable range of residential generation rates, so will be robust in terms of the potential trip generation from these sites. In addition, if the number of households in Scenario 6 is less than the 485 assumed (which seems likely based on the commentary in Section 3.1 of the 1st December 2015 memo) then the total trip generation will allow for a robust assessment of the transport impacts of these submissions.

Modelling Methodology

Both scenarios have been assessed using the Christchurch Assignment and Simulation Traffic (CAST) model with the trips generated by these sites being added to the existing demand in the

model. As noted in the memos, this is likely to slightly over-estimate the total travel demand in the model as the total demand of households in the Greater Christchurch area is fixed, so residences at these sites will be offset by fewer residences elsewhere. Consequently, the assessment has used a slightly worse case than is likely to eventuate, providing an additional level of robustness to the assessment.

This methodology is considered appropriate for this assessment.

Effects of Submissions on the Transport Network

The modelled outcomes appear sensible in terms of the effects on the (modelled) road network, and the effects considered (changes in daily and peak period traffic volumes, and changes in peak period delays). The assessment of these outcomes is fair as far as it goes, but does not consider the following points.

Cranford Street to Papanui Through Trips

The modelling shows that the proposed collector in the Grassmere Street area, connecting between Cranford Street and Grassmere Street, is used as a through route by traffic from the wider area. This is especially apparent in the 2031 modelling with the completion of the Northern Arterial Extension (and Northern Arterial).

Using the trip generation rates shown in **Table 1**, and assuming a conversion factor of 10 to derive daily trips from peak hour trips, the Grassmere Street area is expected to generate just over 5,000 daily vehicle trips. With approximately 14,500 vehicles per day on the roads entering or leaving the Grassmere Street area, the modelling indicates that up to 10,000 vehicles per day could be travelling through the site (rather than to or from the site).

Whilst this will relieve pressure on the surrounding arterial road network, it is unlikely to be consistent with the function of the roads within the Papanui area that they link to:

- Grants Road – local road
- Grassmere Street – local road

From the proposed District Plan, local roads are intended to "function almost entirely for access purposes and are not intended to act as through routes for motor vehicles".

Council traffic counts on Grants Road (between Proctor Street and Grassmere Street) from 2008 report a daily volume of 1,500 vehicles per day. An increase of up to 5,000 vehicles per day from the Grassmere Street area would be likely to have a more than minor effect.

It is suggested that either the classification of Grants Road is reviewed with the aim or reclassifying it as a collector road, or traffic calming measures are identified and implemented within the Grassmere Street area to deter through traffic.

Papanui Parallel Major Cycleway Route

The Papanui Parallel, one of 13 Major Cycleway Routes (MCR) being implemented by Council, connects the CBD to Sawyers Arms Road. Near the Cranford Basin, the route runs along Grassmere Street, then connects directly to Rutland Street in the south via a shared use path.

The proposed accesses from the Grassmere Street area will introduce two intersections across the Grassmere Street section of the Papanui Parallel. Whilst this will provide good connectivity to the cycleway network, it will also introduce new conflicts at these points. The intersection designs will

need to take account of these conflicts so as to not compromise the function of the Papanui Parallel.

Cranford Street Access from Case Site

I agree with the assessment that a direct connection between the Case site and Cranford Street would have at least a minor impact on the operation of this major arterial, and that cumulatively with other (potential) accesses would have a more than minor effect on its efficiency.

In addition to the points raised, the location of the right turn in to Placemakers and the U-turn bay north of McFaddens Road (proposed as part of the Cranford Street Upgrade) may promote rapid lane changes for vehicles turning left out of the Case site so they can turn back up to the north.

Frome Place Access from Case and Croziers Sites

I agree that use of the access to Frome Place should be minimised to limit the impacts on the immediate neighbouring properties, as well as providing a safer route for pedestrians to and from these sites.

Public Transport, Cycleways and Pedestrian Accessibility

The assessment of PT and active mode access to these sites comprehensively covers these modes. It is agreed that these sites are well located in relation to existing and proposed public transport, cycling and pedestrian routes.

Since being completed, additional work has been undertaken to develop designs for linking the shared use path alongside the Northern Arterial Extension to the Papanui Parallel via the Cranford Basin. Although no funding has been committed to this link at this time, it is considered likely to be in place by the time the Northern Arterial Extension opens.

A signalised pedestrian and cycle crossing over Cranford Street immediately north of the Northern Arterial Extension/Cranford Street intersection is now included in this project, so will provide for access across Cranford Street just to the south of the southern extent of the Grassmere Street area.

Another signalised pedestrian crossing across Cranford Street immediately north of McFaddens Street is also included in the Cranford Street Upgrade. This will provide a safe pedestrian (and dismounted cyclist) crossing point over Cranford Street close to the Case and Crozier sites.

Summary

The assessments of the transportation impacts of the submissions on the Grassmere Street area, Case and Crozier sites has been undertaken using an appropriate methodology. The trip generation rates used to determine the additional traffic on the road network as a result of these submissions are at the high end of the ranges normally used, so are likely to overestimate the number of vehicle trips generated. This provides for a robust assessment of the impacts of these sites on the surrounding road network.

The assessment of effects is fairly comprehensive, but should also consider the following points:

- Effects on Grants Road of traffic travelling through the Grassmere Street area; and
- Effects of the roads connecting the Grassmere Street area to Grassmere Street on the Papanui Parallel Major Cycleway Route.

Both of these issues should be addressable during the design of the internal and connecting road network for the Grassmere Street area.

The assessment of access to these sites by PT and pedestrians/cyclists covers the existing and proposed networks based on information known at the time. Since then, additional pedestrian and cyclist facilities have been planned as part of the Northern Arterial Extension and Cranford Street Upgrade projects. These will have the effect of improving accessibility by these modes from all of the submission sites.

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