

DATE 23 July 2013

 JOB No. 80501290

 PROJECT Proposed Plan Change 46

 SUBJECT Abley Response 29 May 2013

FOR INFORMATION OF

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FOR ACTION BY

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 THIS NOTE  
RECORDS:

 MEETING

 PHONECALL

 THOUGHT/IDEA

 WITH

 ABOUT

 CLIENT

 CONTRACTOR

 SUPPLIER

 BETWEEN O Brown / M Smith

AND \_\_\_\_\_

TIME \_\_\_\_\_

### Detail:

A response has been received from Abley Transport Consultants identifying elements of the MWH traffic assessment report that they wish to make comment on. This file note makes reference to the Abley report, and where applicable, cross references to the item numbers within their response.

#### Item 1.1: Sensitivity Test

Abley have provided commentary supporting their justification that this section of Ballantyne Road operates with uninterrupted flow, they have indicated it appears MWH have confused the figures for capacity of a traffic lane and two way road, and they provide further supporting information based on the Highway Capacity Manual. We respond to these three points below.

1. It is our opinion that the traffic flow on Ballantyne Road is interrupted, as supported by the Section 5.2 of Austroads, and presented in the Abley response, that notes "*.....or other controls which cause traffic to stop periodically*". The intersection of Fredrick Street with Ballantyne Road, some 250m north of the applicant site, does not include right turn provisions for the right turn movement off Ballantyne Road into Fredrick Street and therefore a vehicle waiting to turn right turning into the development could impede southbound through traffic, potentially requiring traffic to stop. This same scenario occurs at Gordan Road, some 800m north of the applicant site, and to the south at River Bank Road and the Wanaka Transfer Station at 300m and 400m from the site.

It is important to note that this delay to through traffic is also confirmed in Table 4.4 of the Abley report. The effect of this is a reduced capacity of the road. A local example of a urban to rural fringe location where interrupted flow exists is on Gorge Road, Queenstown, where north of Robins Road there are intersections and accesses that result with stationary turning traffic on Gorge Road.

2. As demonstrated above, the traffic capacity of Ballantyne Road could be lower than that presented in the Abley assessment. The Abley assessment indicated the single traffic lane capacity is around 1,400 vehicle per hour (in one direction), and in Section 2.7 of the Traffic Impact Assessment (TIA), presents that the Ballantyne Road peak hour volumes towards the north (i.e. northbound) to be 925-1010 vehicles per hour (NOTE: this is assumed to be without PC46 traffic). Checking this against Section 2.6 (TIA), it appears that Section 2.7 (TIA) is actually referring to traffic on the northern sections of Ballantyne Road, and not traffic towards the north. Section 4.3 (TIA) subsequently presents the volumes as 960-1,055 vph. We are unsure why these are different to Section 2.7 but note they are minor.

With inclusion of site generated traffic (158 – 162 vph) the two way volume increases up to 1,215 vph. With an assumed 41/59 morning split (56/44 evening) this could be 717 vph in one direction. This is well within the assumed capacity of 1,400 vph (51% capacity), and within the capacity for the 1,200 vph sensitivity suggested (60% capacity). Based on this, there are no concerns with the midblock capacity on Ballantyne Road.

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3. The HCM analysis presented is for uninterrupted flow, therefore is not relevant, however it is noted that this approach indicates Ballantyne Road will operate at Level of Service D (LOS D) with or without development, with the route approaching unstable flow. This is at odds with the Wanaka Transportation Study Scoping Report (2007) observed traffic modelling, which indicates Ballantyne Road will operate with a LOS better than C. Regardless, it is summarised in Bullet 2 above that there are no concerns with the midblock capacity on Ballantyne Road.

### **Item 1.3: Further details regarding the source and values for the traffic generation of the development**

Suitability of the residential traffic generation was previously confirmed in the MWH memo.

The applicant has not provided details of Plan Change 2, made comparisons to this site or identified the potential range of generation for an industrial area. We again request that the application provide these details.

### **Item 1.3: Sensitivity testing of other distribution analyses**

Ableys have confirmed the 67/33 split was not assumed, but has been adopted from that presented in PC4, PC16 and PC32. Adoption of the 67/33 split is considered appropriate.

It is unlikely a reduction in right turn volume will improve the LOS for this site where there are no traffic queues and therefore delay is a function of an individual right turn vehicle interacting with through traffic on Ballantyne Road. A change in traffic distribution, so say 80/20, would increase the volume of right turn traffic off Ballantyne Road into the site, thereby increasing the delay and modelled queue length.

Section 4.4 (TIA) identifies that a Tee intersection has been modelled, the same as the Ballantyne Road / Fredrick Street intersection. While this could be sufficient from a traffic capacity perspective (NOTE: no model details, calibration, validation have been presented to confirm this) it is unlikely to be appropriate from a safety or connectivity perspective. This is further discussed below. To minimise on-going discussion around this issues it is recommended that the applicant provide the sidra traffic modelling files for review along supporting information on their development and calibration.

### **Item 1.4: Intersection levels of service**

The modelling provided for the evening peak has identified as the critical period, with LOS F for the right turn out and the right turn in queue length increasing to six vehicles (50% more than the morning peak). Generally, LOS D or better should be provided on the road network when considering the effects of any proposed development. Based on the outlined LOS the modelling indicates an improved intersection form is required now, however with consideration of the short right turn out queues (95% of one vehicle) it would appear unwarranted to improve the intersection solely based on LOS.

However, there are concerns that drivers turning right out of the development may become frustrated with the delay and attempt to select a gap too small to safely exit. This could result with Ballantyne Road drivers needing to take evasive action to avoid a collision, or potentially resulting with crossing / turning type crashes.

Consideration should be given to improving the operation of this movement from a capacity and safety perspective.

### **Item 1.4: Determination of the timing of a roundabout**

The Abley TIA report and response to matters raised in the MWH assessment report have not presented any demonstrable analysis showing "good" level of service at the Ballantyne Road / Site access intersection if full development of both Three Parks and the Ballantyne Road Mixed Use Area did not occur. The TIA shows LOS E to F for the right turn movement out of the proposed development, which has potential safety issues.

The analysis and response has failed to provide pertinent information related to the sidra traffic modelling such as:

- Observed traffic volumes with heavy and light vehicle splits.
- Critical gaps and follow up headways.
- Plan of the intersection layout (noted it is the same as the Ballantyne Road / Fredrick Street Tee, but what exactly has been modelled).

As identified in Item 1.4: Intersection levels of service, consideration of an alternative intersection form should be undertaken from a capacity and safety perspective.

### **Item 1.6: Intersection form**

The proposed intersection location is close to a change in both horizontal and vertical alignment, resulting in poor sight lines for a right turn into the development due to the topography on the inside of the curve. The proposed location of the intersection may not be appropriate and it may be impossible for detailed design to address a poorly located intersection.

The approach of determining the details of intersection designs subsequent to the plan change application has been adopted by Council on some plan changes, however experience with this approach has identified a number of challenges that would have been more efficiently addressed at the time of the plan change. Conversely, provision of a detailed design presents challenges through reduced flexibility to modify the design. In consideration of the proposed intersection, it appears that a compliant design may not be achievable due to the topography, whereas a modification to the proposed intersection location now, if required, is more easily achieved. Of note, is the issue that the road corridor is 20m wide, and that the AUSTRROADS design standards for the road speed environment requires circulating lane diameter that is greater than the available road corridor. The location of the roundabout on a curve further compounds the required space due to the need for appropriately designed approach alignments that include provisions for footpaths / cycle lanes (either on road or off road). The land parcel required for the installation of an appropriately designed roundabout should be identified now, at the time of the plan change, to enable the appropriate mechanisms to be put into place to protect its construction in later years. Failure to identify and protect this land space now could result in QLDC not being physically being able to construct the roundabout due to the land being occupied.

The location of existing utility services at the proposed intersection point will require the relocation of services with the probable need for aerial trespass over private property in accordance with the Acts and Regulations controlling utility access.

The location of a deep disused quarry / borrow pit on the outside of the alignment will further impact on the available room for an appropriately designed facility.

It is not expected that a detailed design be prepared, or that the applicant be locked into the design, but that sufficient analysis is undertaken to demonstrate to Council (and the applicant) that the proposed intersection location is appropriate. The design also allows the applicant to relocate property boundaries into appropriate positions to ensure sufficient road reserve is provided.

### **Outstanding matters**

The applicant, through Abley Transportation Consultants, has not responded to the following items of our assessment dated 9 May 2013:

1. Item 1.2 – Linkage – Frederick Street
2. Item 1.5 – Road Reserves – New Development
3. Item 1.7 – Pedestrian and Cyclist