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Dear Sean

## **Response to Central Otago District Council Comments on the Wooing Tree Application**

Further to recent e-mails, we understand that Central Otago District Council has provided transportation comments on the Wooing Tree application (via Antoni Facey of consultants Avanzar). This letter responds to the comments made. To assist reading, the particular paragraphs being addressed are listed first followed by our response, and our response has been informed by discussions with Mr John Duthie.

### ***Paragraph 5***

Notwithstanding other comments made by Mr Facey, we note that in this paragraph he considers that technical solutions are available to address the concerns that he has. We therefore infer that the general principles of the proposal are not in question, but rather, matters of detail.

### ***Paragraph 6***

Since the application was lodged, there have been ongoing discussions with Waka Kotahi NZTA, which have resulted in revisions to parts of the layout. We are unclear whether Mr Facey has had access to these, and has taken them into account in his assessment.

### ***Paragraph 12***

The design of this intersection has been subject to ongoing discussions with Waka Kotahi NZTA, and one outcome of this is that the access into the commercial area has been removed.

### ***Section 4 ('Location of the Commercial Zone')***

In the context of the commentary around pedestrians and vehicles within the commercial area, we highlight that the traffic generation of the residential area is a total of 315 vehicles (two-way) in the peak hours. This equates to an average of one vehicle movement every 11.5 seconds, at the busiest of times, passing through the commercial area to the residential areas.

From a solely transportation perspective, we confirm that removing all traffic from a commercial area eliminates the risk of conflict, but in practice, the design of any commercial area needs to balance 'busyness' and activity with the movement of people. This therefore includes other disciplines such as urban design (where we cannot offer any comment as this is not our expertise) in the design and location of the commercial area.



The revision to the main access into the site (discussed below) will mean that the issue described by Mr Facey is less relevant to the connection between the western and northern areas. East-west movement within the northern area is also supported by the proposed slow-speed environment. However, and notwithstanding this, we have applied the methodology set out in the NZTA Pedestrian Planning and Design Guide to assess the level of service provided for crossing pedestrians. Taking the most extreme scenario, we have evaluated the outcomes of pedestrians crossing a road carrying the entirety of the development traffic (as set out in Table 5 of the Transportation Assessment). At the peak times, even under this scenario, then Level of Service B would be provided, noted as being 'very good'.

### ***Section 5 ('Shared Space – On Road')***

From a transportation perspective, we understand that the rationale behind the shared space was to create a different roading environment to the one on which drivers will have previously travelled. That is, rather than drivers assuming that they were within a similar environment to the state highway or to other major district roads, the shared space would alert them to the fact they that are now entering a commercial/residential area where pedestrians may be present, and that they should drive in a different manner.

However in view of the comments made, we understand that the shared space has now been removed from the proposal.

### ***Section 6 ('Shared Space – Off Road')***

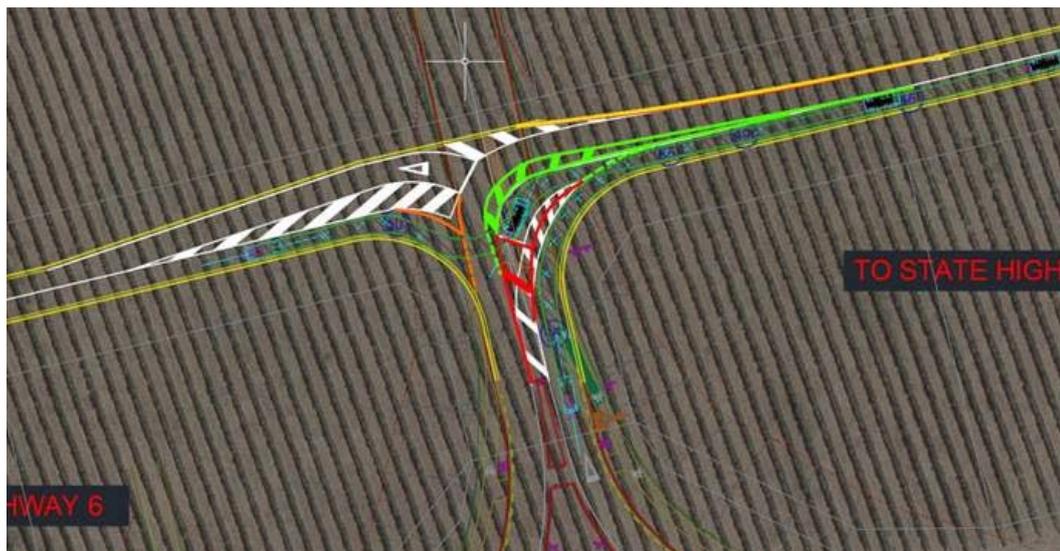
As noted above, in view of the comments made, we understand that the shared space has now been removed from the proposal.

### ***Section 7 ('Intersection Spacing')***

Since the application was lodged, there have been ongoing discussions with Waka Kotahi NZ Transport Agency on this matter. As part of this, we produced a detailed Technical Note that assessed how the intersection would operate with regard to the interaction with the roundabout and as part of this we set out a range of alternative options.

Based on information received, we understand that a position has been reached that is acceptable to the Applicant and Waka Kotahi whereby the main entry road into the development will now curve around to the east (we note Mr Facey was copied into this email trail). We anticipate that a revised intersection layout of this nature will address the concerns expressed by Mr Facey on this matter.

We have been provided with a preliminary sketch of the layout (produced by consultants WSP) which illustrates the concept.



**Figure 1: Sketch Layout for Internal Intersection**

For clarity, the roundabout design produced by WSP shows that the traffic speed on the Wooing Tree access and on the circulating carriageway of the roundabout is expected to be 40km/h, rather than the 50km/h assumed by Mr Facey.

### ***Section 8 ('Pedestrian and Cyclist Connectivity')***

In paragraph 40, Mr Facey highlights that the state highway creates a barrier to connectivity. This matter was traversed at the initial hearing for the Wooing Tree plan change, and ultimately this led to the inclusion of a pedestrian underpass beneath the highway. The underpass remains a part of the proposal, and we consider that this mitigates the severance (as it was acknowledged to do for the earlier plan change).

While it is laudable aim, when considering a large site such as this, it is not possible to ensure that all pedestrians and cyclists are directly aligned with the underpass – there are simply too many route options available to these road users. Rather, we consider that there needs to be a degree of reliance upon signage and for pedestrians and cyclists to preferentially travel to the underpass rather than attempting an at-grade crossing of the highway. This matter is discussed further below, in the context of the underpass location.

### ***Section 10 ('Linkage to Shortcut Road')***

The particular concern raised in this instance is the absence of a 'direct' connection between Shortcut Road and the proposed roundabout at the main site access.

Under the proposed arrangement, a driver wishing to travel to Shortcut Road would enter the site at the Barry Avenue roundabout, sweep around the east as shown on Figure 1, and then be provided with a relatively straight section of road until almost at the eastern extremity of the site. At this location, there is a curve and then the driver must negotiate an intersection (which is already constructed as part of existing consents at the site).

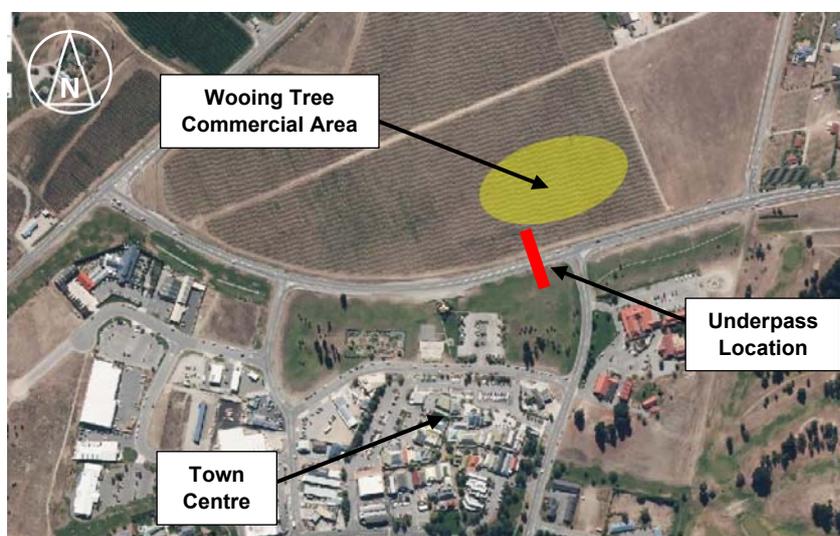
In this regard then, we consider that the route is, in effect, direct. It is not convoluted, nor does it require drivers to give-way at multiple intersections. In practice, we also consider that the layout will assist in ensuring that vehicle speeds are kept low – with a wide and straight road alignment, higher speeds can be expected (as indicated for example in Standard NZS4404:2010, Figure 3.2).

A narrower carriageway with a more curving alignment will assist in supporting a lower speed environment and therefore enhance positive road safety outcomes.

### **Section 11 ('Underpass')**

In practice, the underpass must either be located to the east or west of the roundabout, and the roundabout location is fixed. In the event that the underpass was located towards the east, rather than the west as presently proposed, many of the same issues identified by Mr Facey would remain.

However when considering features such as an underpass, the original and destination of travellers within a wider context is a relevant matter. In this case, the underpass lies on the desire line between the commercial activities within the site and Cromwell town centre, and therefore on a route that it could reasonably be expected pedestrians will seek to use. In other words, pedestrians will not have to deviate from their natural route in order to use the underpass.



**Figure 2: Underpass Location**

We do not agree that the underpass will necessarily be difficult to find – rather, we anticipate that appropriate signage and roading treatments will be provided as a matter of course to support the conspicuity/legibility of the route.

### **Section 12 ('Public Transport')**

As Mr Facey notes, there are currently no public transport services within Cromwell. Within the Transportation Assessment we noted that the site lies just 200m to 600m from the current (long distance) bus stops within the town centre. As such, we are of the view that the first public transport services in Cromwell are unlikely to serve the Wooing Tree site, which is within walking distance of what is likely to be the main bus hub. Rather, the buses will serve the more outlying areas of the township, where walking to the town centre facilities is not a viable option. That said, the core routes within Wooing Tree are constructed to a standard that could accommodate a bus, if one was implemented in future.

### **Section 13 ('Tour Coaches')**

We understand that the tour coaches shown on the plans are solely indicative of where such vehicles *might* be parked in order to ensure that some level of parking provision is made for visitors travelling in a group.



With regard to the matter of the roading geometry, as with most roads there is a tension in the vehicle for which they are designed. In this case if the roads were designed for the easy movement of coaches (noting that a tour coach is around 12.5m long), then the roads and intersections would be much greater than needed for the movement of cars. However cars are by far the most frequent vehicle on the network, and thus providing wider roads and more generous intersection geometries would lead to higher speeds and potential adverse road safety outcomes. Conversely, narrowed geometries make it harder for coaches to manoeuvre, but creates a more appropriate outcome in order to slow car speeds.

In this case, the approach taken has been to provide constrained geometries for the formed roadways. However in our previous Transportation Assessment we noted that the following legal widths for the road corridors were proposed:

- Road 1, Road 2 (central and east), Road 3 (south): 20m;
- Road 2 (west), Road 3 (central and north), Road 4, Road 7: 17m; and
- Road 6 and private road: 14m.

These widths are sufficient that if it was desired to form larger intersections and wider roadways, there would be no constraints to doing so. Consequently, while at this stage we remain of the view that the road geometries are appropriate, the matter could easily be reassessed at engineering approval stage (that is, before the roads are constructed). This is because the roads will be vested, and therefore the Council must be satisfied that they are fit for purpose. In the event that at that point the Council remained of the view that the geometries should be increased, it would be straightforward to do this within the legal road reserves.

#### **Section 14 ('Traffic Modelling and Growth')**

Mr Facey asserts that there will be significant residential growth in Cromwell by 2030. However that is not to say that traffic volumes will increase – rather, if increased use is made of non-car travel, then population growth and growth in car travel will not be in-step with one another.

Our traffic flows were developed using the same approach as NZTA adopted when devising the traffic flows for their forthcoming conversion of the State Highway 6 / State Highway 8B intersection to a roundabout, which simply factored traffic flows on the state highways without adding in any additional growth for Cromwell.

However our modelling of the State Highway 8B / Barry Avenue roundabout shows that the layout has ample capacity and at most, Level of Service C arises by 2030, which is considerably within the expected performance parameters.

Please do not hesitate to contact me if you require anything further or clarification of any issues.

Kind regards  
**Carriageway Consulting Limited**

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