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Dear Kirstyn

Tunnel Beach Road Car Park: Assessment of Application

Further to our e-mails and discussions, we have reviewed the application for a car park at Tunnel Beach Road. Our comments are set out below, and are based on:

- The original application, received 18 January 2021;
- The first response of the applicant's team to the Request for Further Information, received 24 February 2021; and
- The additional response of the applicant's team to the Request for Further Information, received 26 March 2021.

Our review is set out using the same chapter headings as the Beca Transport Assessment for ease of reference.

Transport Assessment Section 1: Introduction

This section of the report provides background information for the project and does not contain any technical detail.

Transport Assessment Section 2 Existing Transport Context

Section 2.1 Existing Site Operation

The report notes that there are 18 angled parking spaces available for parking plus parking that occurs on the opposite side of the road. The angle of the spaces (orientated towards the north) means that it will be difficult for drivers to directly enter a space but rather, in many cases it is likely that a driver will either need to turn around at the southern end of the road or (as is more likely), carry out a short reversing movement within the road to align the vehicle with the vacant parking space. The latter creates an additional hazard for other road users.

We concur that the road geometry means that larger vehicles will have difficulty manoeuvring. We would also note that many campervan drivers will be unfamiliar with their vehicle, and will therefore also have difficulties in manoeuvring. The matter raised in the report, of campervans parking within standard spaces that are too short for the length of the vehicle, is a common outcome in areas with higher campervan volumes, and in passing we are aware that some of the newer District Plan now include specific requirements for the provision of campervan parking spaces in certain areas.

The report notes that the area is used by freedom campers, but in the s 92 response, Beca has confirmed that freedom camping is not permitted.



The report does not include any surveys or traffic counts of existing usage, which we would typically expect to see.

Section 2.2 Surrounding Land Use

We concur with this description and make no further comment.

Section 2.3 Local Road Network

We highlight that the geometry of Tunnel Beach Road is further constrained by the presence of powerpoles on one side close to the traffic lanes, and we further highlight the presence of yellow 'no overtaking' centrelines.

Section 2.4 Walking and Cycling

We concur with this description and make no further comment.

Section 2.5 Public Transport

We concur with this description and make no further comment.

Section 2.6 Crash Analysis

Beca reported two injury crashes at the Green Island Road / Blackhead Road / Tunnel Beach Road intersection between 2010 and 2019, but our assessment shows there were also two non-injury crashes in the area. One crash occurred near the intersection when a driver lost control on a wet road surface and left the road. The other occurred to the immediate east of the intersection when an eastbound vehicle ran into the rear of another eastbound vehicle.

The crash analysis only extends to 2019, and we have therefore reviewed the Waka Kotahi Crash Analysis System to date. However no further crashes have been recorded.

Section 2.7 Future Upgrades

The revision of the Green Island Road / Blackhead Road / Tunnel Beach Road intersection to convert the priority intersection to a roundabout scheme was completed in November 2020. We anticipate that this will resolve the issue of crashes due to the previous geometry, as Beca identifies. As part of the scheme a footpath was constructed on Blackhead Road from Mulford Street (approximately 1km from the site) to and around the corner of Tunnel Beach Road.

Transport Assessment Section 3: Proposed Development

Slightly revised plans have been provided in response to the s 92 request, and our review is based on these rather than the layout that was originally included in the application. However the key features of the proposal remain the same, with 58 standard car parking spaces, 2 mobility spaces, 4 campervan spaces and an area for coaches. An important part of the proposal is that the existing parking spaces on Tunnel Beach Road will be removed and converted into a footpath. Parking restrictions will be put in place on both sides of Tunnel Beach Road.

We note that it is expected that an existing gate on a private roadway will be relocated 10m further west. No information has been provided that this has been agreed to by the landowner.

Transport Assessment Section 4: Assessment Against District Plan

Further information was provided by Beca regarding the gradients of the aisle because although the maximum gradient noted within the car park was described as being suitable for cars, coaches can also be expected to be present and larger vehicles have different maximum gradients (and rate of change of gradient). In the second response to the s 92 request, Beca advised:

The vertical geometry of the access and subsequent vertical tracking of coaches has been revised. The revised grade changes for the summit curves exceed the 1 in 8 requirement (12.5%) stated the Dunedin Second Generation District Plan (Rule 6.6.3.7) in two locations and vertical tracking of coaches has been undertaken in these locations (shown below). The ground clearance for the vertical tracking of coaches has been revised to 210mm based on the formula provided for truck and bus ground clearances in Austroads Guide to Road Design Part 3: Geometric Design (Section 8.2.7). This shows that the ground clearance on the summit grade changes are 40mm and 90mm, therefore, adequate ground clearance is provided for coaches. The issue relating to the rear scraping on sag curves is considered to be acceptable as the maximum grade change for a sag curve is 8% which is less than the 1 in 6 (16.7%) maximum grade change for sag curves as required by the Dunedin Second Generation District Plan (Rule 6.6.3.7).

Consequently there remains a non-compliance with the gradients (Rule 6.6.3.7 as noted above). There are no standards within New Zealand for the gradients suitable for coaches, but clearance is provided at crest curves such that a larger vehicle will not scrape and this has been shown from first principles. With regard to sag curves, the 1 in 6 noted by Beca is based upon what is required for a car rather than a coach. The 8% provided (1 in 12.5) is steeper than recommended under an Australian standard (AS2890.2:2002) for the rate of change of a gradient for a large vehicle and we therefore have concerns that the rear of larger coaches will scrape. However this also depends on the vehicle – there is no standard for the rear clearance of a coach, and the bodywork at the rear of the vehicle can vary on a case-by-case basis.

Beca notes that the gradient is “acceptable”. In view of the limited number of coaches that are likely to be present, and that even in the worse case of a slow-moving coach in the southernmost aisle, the majority of the car park remains accessible, we agree.

In respect of the surfacing of the car park (Rule 6.6.1.5) Beca notes that the car parks are to be gravelled and the spaces will be marked with half-round posts. This arrangement is common in unsealed car parks. Beca also sets out that maintenance will be carried out by the Department of Conservation. We have not seen any formal agreement for this, but in the event that severe corrugation or potholes are present, the Council is able to take enforcement action if required to ensure that the surfaces are well-maintained.

We previously queried whether sufficient manoeuvring area was available for the campervans to enter and exit their dedicated spaces (Rule 6.6.2.1). We remain of the view that parts of the landscaping adjacent to those spaces will be regularly over-run by campervans. However this is not an uncommon outcome for planting within car parks.

Transport Assessment Section 5: Assessment of Effects

Section 5.1 Vehicular Access

We agree that car parking in and of itself does not generate trip-making in this area because at present parking is unrestricted. That is, rather than the current absence of formal parking dissuading visits, any current visitors to the area will simply park by the side of the road. As such, we agree that the efficiency of the roading network will not be adversely affected.

Section 5.2 Safety

We concur that accommodating parking within a specifically-designed facility will reduce road safety risk in the immediate area for all road users.

The scheme drawings initially included zebra crossings within the car park aisles but in our experience these typically create difficulties because car drivers and pedestrians are unclear as to who has the right-of-way. Drivers can also expect pedestrians to cross only at those locations, whereas within a car park, pedestrian crossing movements of the aisles occur in numerous locations. The zebra crossings have now been removed from the drawings, which we support, and we anticipate that crossing movements will be made on a 'courtesy' basis.

We agree that assessing the sightlines at the access based on an 80km/h speed of vehicles is unreasonable due to the prevailing geometry. We therefore support the sightlines provided, despite the notional shortfall, and consider that they will be ample for the actual speeds of vehicles in the area.

Section 5.3 Alternative Mode Provisions

The application sets out that “no cycling facilities have been included in the proposed design”. However the plans provided in response to the s 92 request show cycle parking stands located towards the south of the site.



Figure 1: Extract from Beca Drawing Showing Cycle Parking

Because there are steps located on the northern side of this area, at present cyclists will need to share the southernmost aisle with moving cars and coaches. Car drivers will also be reversing into this aisle. Each of these presents a potential road safety concern for cyclists also using the aisle.

The pathway to the north and east of the cycle parking area is 1.8m wide. This is only slightly less than the minimum width for a shared walking and cycling route (2.0m) and we note that cyclists could make use of the adjacent grassed area to avoid any conflict with pedestrians. We also expect that cyclists will be travelling slowly in this area (and may have even dismounted). As such, we consider that the plans should be updated to show a cycle stairway (that is, a channel/rail alongside the steps to allow a cycle to be pushed up or down), and that signage should be provided at the eastern end of the pathway to indicate that it is the route to be used by cyclists. We consider that

these measures will mitigate the potential road safety risk arising from the cycle parking in this location and therefore recommend that a condition of consent is put in place for this.

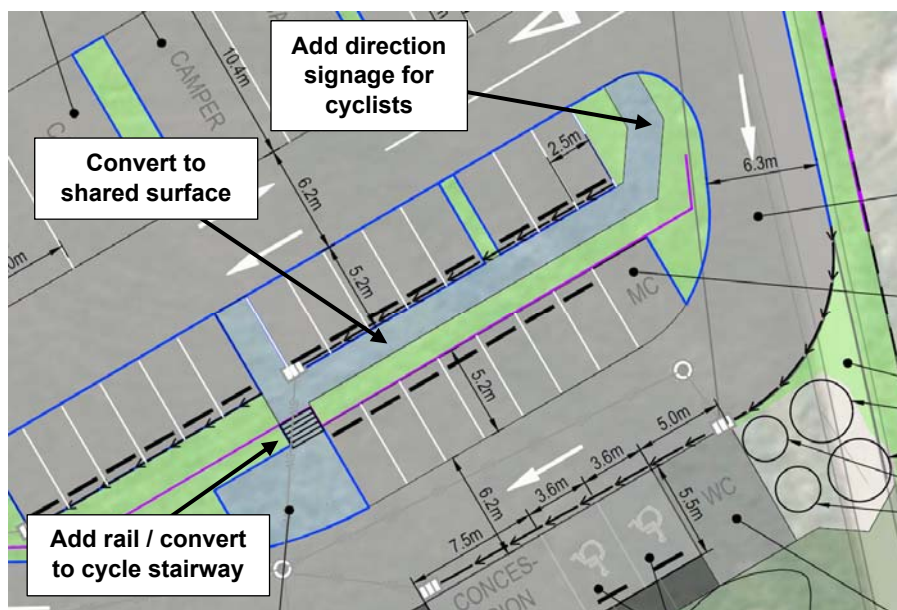


Figure 2: Proposed Revisions for Drawing

We agree that the provision of an area for buses/coaches will support travel by this mode.

Through the s 92 request we queried how the coach 'parking' area was intended to operate. Beca advised that the area was to be used as a drop-off / pick-up area only, and that coaches were not expected to stay for an extended period of time. This arrangement was also intended to ensure that if a second coach entered the site, it would only need to wait in the aisle for a short period of time. It was further advised that "suitable signage will be provided to support this (short duration of stay)". We are comfortable with this approach, although we note that no details have been provided of the signage and therefore consider that this should form a condition of consent.

Section 5.4 Loading Provisions

The site does not provide for a dedicated loading area but we agree with Beca that service vehicles will be infrequent. The nature of activity within the concession area is such that vehicles/trailers will not arrive and depart at peak times, because these are the times when the concessionaire will wish to be present. We appreciate that there will be a service vehicle for the toilets but we acknowledge that this will be infrequent, present for only a short period of time, and will likely only be present at quieter times.

We therefore support Beca's view that no loading provision is required in this instance.

Transport Assessment Section 6: Conclusion

Beca's overall conclusion is that the proposed car park will improve the access and safety for people accessing the Tunnel Beach Track and on Tunnel Beach Road, and consider that the transportation effects are acceptable. Subject to the comments above, we agree.



Carriageway Consulting Conclusions

One shortfall in the application relates to the existing demand for car parking in the area, with no survey data being provided. Therefore it cannot be determined whether the provision of 58 spaces represents the number needed to meet demand, is too large or is too few. Based on the information in the application that people will park up to 200m away, and taking into account the existing 18 angled spaces, this would indicate a typical peak demand for at least 45 parking spaces. In our view then, the provision of 58 spaces would appear reasonable to meet demand and largely eliminate the potential for roadside parking to arise.

We consider that it is likely that larger coaches will, from time to time, scrape their rear bodywork at the foot of the internal ramps. While not desirable, in view of the limited number of coaches that are likely to be present, and that even in the worse case the majority of the car park remains accessible without the need to utilise the southernmost aisle, we consider that the arrangement is acceptable.

There are several actions that fall to third parties or which require actions outside of the remit of the application: and which are relied upon in the application:

- Department of Conservation: maintenance of car parking areas
- Dunedin City Council: installation of parking restrictions on Tunnel Beach Road, removal of existing car parking, installation of footpath on Tunnel Beach Road
- Owner of property towards west: agreement to relocate existing gate 10m to the west

No information has been provided that these matters can/will be implemented. We recommend that further certainty is provided that these measures are carried out, either through side-agreements or through conditions of consent (noting that conditions cannot be imposed on third parties). In the event that any of these are not implemented, we recommend that the effects of this are assessed.

We have recommended that minor revisions are made to the arrangements for cycle parking to ensure that the parking can be accessed safely, and that this is addressed through a condition of consent. We have also recommended a condition of consent in respect of signage for the coach drop-off area indicating that longer-term parking is not permitted. We suggest a P10 or P15 sign would be appropriate.

Subject to the comments above, we are of the view that the transportation-related effects of the proposal will be less than minor. Accordingly, we do not consider that there are any transportation reasons why the application could not be recommended for approval. For the same reasons, and again subject to the comments above, in our view there are no transportation reasons why the application should need to be notified.

We would be pleased to discuss any aspects of this letter with you at your convenience.

Kind regards

Carriageway Consulting Limited

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