

**BEFORE THE HEARINGS COMMISSIONERS
APPOINTED BY THE QUEENSTOWN LAKES DISTRICT COUNCIL**

UNDER the Resource Management Act 1991

IN THE MATTER of a submission on Te Pūtahi Ladies Mile
Variation to the Proposed District Plan

BY **LADIES MILE PET LODGE LIMITED**
Submitter

STATEMENT OF EVIDENCE OF ANDREW DAVID CARR

Dated: 5 October 2023

Statement of evidence of Andy Carr

Introduction

- [1] My name is Andrew (“Andy”) David Carr.
- [2] I am a Chartered Professional Engineer and an International Professional Engineer (New Zealand section of the register). I hold a Masters degree in Transport Engineering and Operations and also a Masters degree in Business Administration.
- [3] I served on the national committee of the Resource Management Law Association between 2013-14 and 2015-17, and I am a past Chair of the Canterbury branch of the organisation. I am also a Chartered Member of Engineering New Zealand (formerly the Institution of Professional Engineers New Zealand), and an Associate Member of the New Zealand Planning Institute.
- [4] I have more than 34 years’ experience in traffic engineering, over which time I have been responsible for investigating and evaluating the traffic and transportation impacts of a wide range of land use developments, both in New Zealand and the United Kingdom.
- [5] I am presently a director of Carriageway Consulting Ltd, a specialist traffic engineering and transport planning consultancy which I founded in early 2014. My role primarily involves undertaking and reviewing traffic analyses for both resource consent applications and proposed plan changes for a variety of different development types, for both local authorities and private organisations. I have previously been a Hearings Commissioner and acted in that role for Greater Wellington Regional Council, Ashburton District Council, Waimakariri District Council and Christchurch City Council.
- [6] Prior to forming Carriageway Consulting Ltd I was employed by traffic engineering consultancies where I had senior roles in developing the business, undertaking technical work and supervising project teams primarily within the South Island.

[7] Over the past 18 years I have carried out a large number of projects in Queenstown Lakes District. In the vicinity of the area affected by the Te Pūtahi Ladies Mile Variation I have provided technical advice in respect of:

- (a) A commercial area within Lake Hayes Estate;
- (b) The early childhood centre on Onslow Road ('Gems Miro');
- (c) Plan Change 41, which resulted in the creation of the Shotover Country subdivision;
- (d) Shotover Primary School travel plan;
- (e) An initial assessment for the Ministry of Education regarding possible sites for schools in the area; and
- (f) Advice to submitters to the Queenstown Country Club

[8] My children also live in Shotover Country, and I have regularly driven through both the Stalker Road roundabout and Howards Drive intersections.

[9] More generally, I have provided advice for wide range of private plan change requests and a variety of resource consent applications in the district. As a result of my experience I consider that I am fully familiar with the prevailing transportation environment in the area.

Code of conduct for expert witnesses

[10] I confirm I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2023 and that I have complied with it when preparing my evidence. Other than when I state I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of evidence

[11] I have been instructed by Ladies Mile Pet Lodge Limited (**Pet Lodge**) to give expert traffic advice in respect of its submission on Te Pūtahi Ladies

Mile Variation to the Proposed District Plan by the Queenstown Lakes District Council. The particular part of the submission where I have been asked to provide my views relates to the Key Crossing and the Crossing Curtilage Area Overlay.

Background

[12] The Key Crossing and Crossing Curtilage Area Overlay in relation to the Pet Lodge site is shown below.

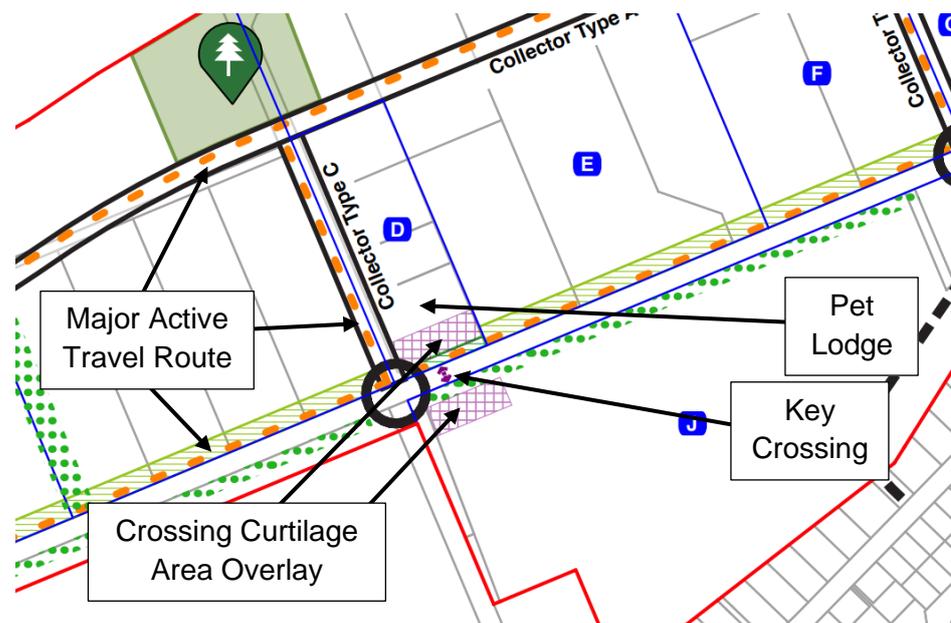


Figure 1: Extract from Ladies Mile Structure Plan (Annotated)

[13] It can be seen that the Crossing Curtilage Area Overlay occupies the full frontage of the southern part of Pet Lodge. The Key Crossing location is illustrated by purple arrows within the highway corridor, and this lies approximately 40m east of Howards Drive.

[14] On the immediate west of Pet Lodge is a proposed new road and a Major Active Travel Route. Major Active Travel Routes are also shown running along the full length of the northern side of the highway, although there is no provision shown on the southern side of the highway.

[15] Pet Lodge presently has an access located directly onto State Highway 6, located 85m east of the Howards Drive intersection (and therefore 45m from the Key Crossing Point). The current access lies within the proposed Crossing Curtilage Area Overlay.

Provisions of the Te Pūtahi Ladies Mile Variation

[16] There are a number of provisions of the Variation in respect of the Key Crossing location:

- (a) 49.2.6.4 *Encourage the use of pedestrian and cycling modes by:*
 - b. Preferring the provision of an underpass for the Key Crossing indicated on the Structure Plan; and*
 - e. Enhancing active travel experiences by requiring adjacent development to integrate with the Key Crossing shown on the Structure Plan and by providing high-quality recreation spaces along routes.*
- (b) 49.4.19 *Development within the Crossing Curtilage Overlay area shown on the Structure Plan*

For the purpose of this rule, development means new buildings and structures, earthworks requiring consent under Chapter 25, and car parking areas. Discretion is restricted to the effects of the proposed development on the provision of the Key Crossing, including consideration of the integration of the development with the design, legibility, and safety of the crossing.

- (c) 49.5.15 *Development shall be consistent with the Structure Plan at 49.8, except that*
 - b. The location of Collector Road Type C may be varied by up to 20m to integrate with the intersection with State Highway 6.*
 - c. The location of the Key Crossing shown on the Structure Plan may be varied by up to 30m.*
- (d) 49.5.33 *Staging development to integrate with transport infrastructure*

Development (except for utilities and other physical infrastructure) within the Te Pūtahi Ladies Mile Sub-Areas shown on the Structure

Plan shall not occur prior to all the corresponding transport infrastructural works listed below being completed.

Sub-Area E: Pedestrian/ cycle crossing of State Highway 6 east of Howards Drive intersection at the location shown on the Structure Plan as Key Crossing (+/- 40m)

- (e) *49.5.37 Development shall be consistent with the Structure Plan at 49.8, except that*

b. The location where Collector Road Type C intersects with State Highway 6 may vary by up to 20m to integrate with this intersection.

c. The location of the Key Crossing shown on the Structure Plan may be varied by up to 30m.

- (f) *49.5.50 Staging development to integrate with transport infrastructure*

Development (except for utilities and other physical infrastructure) within the Te Pūtahi Ladies Mile Sub-Areas shown on the Structure Plan shall not occur prior to all the corresponding transport infrastructural works listed below being completed.

Sub-Area D: Pedestrian/ cycle crossing of State Highway 6 east of Howards Drive intersection at the location shown on the Structure Plan as Key Crossing (+/- 40m)

- (g) *49.5.56 Staging development to integrate with transport infrastructure*

Development (except for utilities and other physical infrastructure) within the Te Pūtahi Ladies Mile Sub-Areas shown on the Structure Plan shall not occur prior to all the corresponding transport infrastructural works listed below being completed.

Sub-Area J: Pedestrian/ cycle crossing of State Highway 6 east of Howards Drive intersection at the location shown on the Structure Plan as Key Crossing (+/- 40m)

[17] In my view, it is clear from the provisions that:

- (a) There is an intent that development in some areas of the Structure Plan area (D, E and J) should not occur prior to the Key Crossing of the highway being in place;
- (b) The location of the Key Crossing is “*preferred*” and it is located sufficiently accurately that an assessment can be made that it is acceptable for it to be relocated by up to 40m (although 30m is stated in some provisions) but not more;
- (c) Adjacent development is “*required*” to integrate with the Key Crossing;
- (d) There are constraints on development (new buildings, structures, earthworks requiring consent and car parking areas) within the Crossing Curtilage Overlay, and an assessment is required of how the development integrates with the design, legibility, and safety of the Key Crossing.

[18] More generally, I note that there are similar provisions in the Variation for a pedestrian/cycle crossing of the highway west of the ‘Eastern Roundabout’ and west of the Stalker Road intersection. I discuss these subsequently.

[19] I have not identified any requirements in respect of the timing of the provision of the road running along the western side of the site (Collector Type C).

Assessment of Pedestrian/Cycle Crossing Locations in the Variation

[20] I have reviewed the Masterplan Transport Strategy (Appendix 3A(i) to the s 32 report. This discusses “*promoting walking, cycling and bus use on SH6*” and includes a “*segregated underpass crossing of SH6 for pedestrians and cyclists at Howards Drive providing a safe walking and cycling connection between LM, LHE and SC communities to the town centre, high school, community hub, sports hub and community facilities*” and also a “*reduction in speed limit to 50 or 60 Km/h between the SH6 roundabouts with Stalker Road and the proposed eastern roundabout*”.

[21] Importantly it sets out the intent for “*signalised crossings of SH6 at its roundabouts with Stalker Road, Howards Drive and the new eastern roundabout to provide safe walking and cycling connections to the proposed bus stops and the proposed active travel improvements on Stalker Road and Howards Drive*”. The accompanying graphic shows signal controlled pedestrian/cycle crossings to the west of the Eastern Roundabout and west of the Stalker Road roundabout, as carried forward into the Variation provisions. It also shows the underpass, on the eastern side of Howards Drive. However the Variation does not mention the at-grade crossings that are shown to the north, west and south of the Howards Drive intersection, only the underpass.

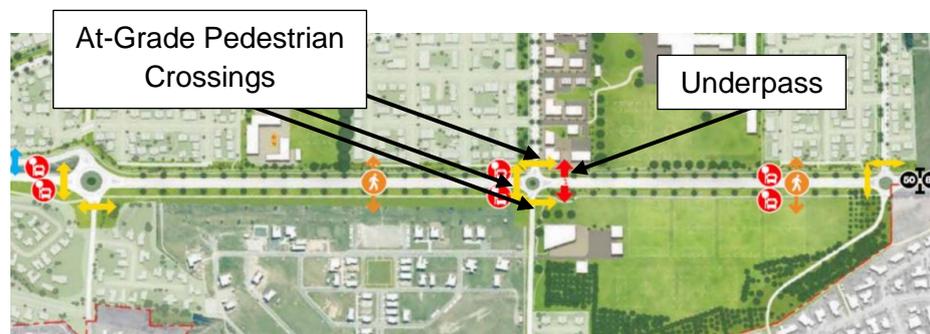


Figure 2: Extract from Masterplan Transport Strategy ‘SH6 Proposed Bus Stops and Crossing Points’ (page 62)

[22] The importance of the provision of the at-grade crossings is further reinforced by a description of “*high quality bus stops ... at ... Howards Drive - with signal-controlled pedestrian crossing facilities on the west, north and south sides of the roundabout and underpass to the east*” (page 69). The signals are “*in addition to the underpass*” (page 79) and will also provide a safe crossing point for pedestrians and cyclists on the shared path along the highway. Signalized pedestrian crossings are described as being appropriate for the highway (Appendix D page 2) with Appendix D also setting out the rationale for the preferred arrangement.

[23] It is noted that “*alternative alignments for the Howards Drive underpass were considered but rejected since they do not provide the direct linkage between the Town Centre/High School and the Community/Sport Hubs and Lake Hayes Estate (LHE)*.” Notwithstanding this, Appendix D (page 14) shows an arrangement with an at-grade crossing of the highway to the east of Howards Drive, and notes a previous design was produced

with an underpass on the west of Howards Drive but no crossing facilities to the east.

[24] Interestingly, this report also appears to show redevelopment of the Pet Lodge as part of the Ladies Mile Masterplan proposal.

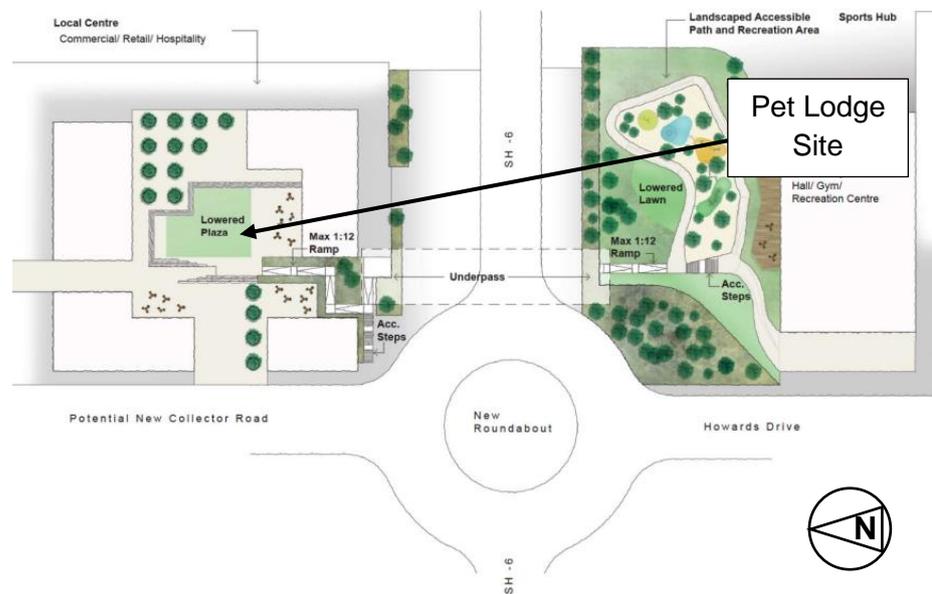


Figure 3: Extract from Masterplan Transport Strategy 'Howards Drive Underpass LM Masterplan proposal' (Appendix D page 21) Annotated

[25] The text accompanying the graphic sets out that “*The ramp designs are incorporated into the Town Centre and the Community Hub masterplanning*”, notwithstanding that the northern ramp clearly penetrates into the Pet Lodge (by more than 12m). It goes on to say that an underpass located towards the west of Howards Drive was rejected because it did not provide a “*direct connection*” between the Ladies Mile Town Centre / High School and the Community / Sport Hubs and Lake Hayes Estate. No other reasons are given. For completeness I again note that this part of report reiterates the underpass is “*complemented*” by at-grade crossings of the highway.

[26] Also for completeness, I have been unable to identify any references within the main s 32 report regarding the underpass, but only more generalised references to safe crossing points of the highway. I note though that “*while the preferred school locations are shown in the Masterplan, the locations are not mandated through the planning provisions ... recognising that other processes (including the land*

acquisition process and Notices of Requirement) will be involved and therefore maintaining flexibility for the establishment of schools in the Zone is key” (s 32 main report page 11).

[27] I also note reference to *“the provisions requiring integration of development within the Crossing Curtilage Area Overlay with crossings will provide for better design outcomes, particularly within high volume/use areas such as the Commercial Precinct and Open Space Precinct, to support the integration of the two sides of State Highway 6”* (page 70)

Discussion

[28] It is commonly accepted amongst transportation planners that pedestrians, and to an extent cyclists, typically endeavour to travel in a manner that reduces the journey length. In other words, insofar as it is possible, these road users travel in a straight line. When planning for these modes of transport then, it is important to devise routes that link locations which people might wish to walk or cycle between while also minimising unnecessary / additional distance.

[29] In this regard, underpasses have an inherent flaw because (as noted in the s 32 report Appendix D), they have significantly longer walking/cycling times due to the length of the approach and departure ramps. They also require pedestrians and cyclists to change their level, which can also cause issues. There therefore needs to be a clear rationale about why an underpass is the optimum solution in any particular location.

[30] I have been unable to identify why an underpass has been proposed. The s 32 report clearly establishes that at-grade crossings are appropriate, and at-grade signalised crossings of the highway are proposed on the northern, western and southern side of the intersection. There can therefore be no road safety related reason for the underpass, since an at-grade highway crossing is proposed just to the west and across the highway. There are no calculations of the volumes of pedestrians or cyclists that show a higher-capacity route is needed (or that at-grade signals would have insufficient capacity).

- [31] That aside, the rationale set out in the report for the selection of the eastern side of the intersection for the underpass, is that this location provides a direct route between the Ladies Mile Town Centre / High School and the Community / Sport Hubs and Lake Hayes Estate. However this is not the case, because it disregards Pet Lodge, where the northern ramp is located. In short, the northern ramp cannot be formed without using the Pet Lodge site. If the site cannot be used, then the northern ramp cannot be 'direct'.
- [32] Further, the s 32 report sets out that the location of the school is also not fixed and still needs to progress through a (different) statutory process. In my view then, there can be no certainty that the criterion of providing a direct route on the southern side of the highway will be achieved either.
- [33] The only reason presented in the s 32 report for rejecting the potential location for the underpass towards the west of Howards Drive is that it did not provide a direct route. However if a location to the east of Howards Drive cannot be shown to provide a direct route, then under this reasoning, it also should be rejected.
- [34] It would be structurally possible to turn the northern ramp through 90-degrees such that it did not enter the Pet Lodge site. However the s 32 report notes that "*bends and angles should be avoided*" at underpasses (Appendix D page 20) due to these encouraging vandalism, crime and anti-social behaviour. In turn, these factors mean that the underpass is less likely to be used due to concerns about personal safety (Appendix D page 19). It is not unreasonable then that under this scenario, pedestrians and cyclists will instead opt to use the at-grade signals on the west of Howards Drive. I discuss this subsequently as the matter is raised in the Council's s 42A report.
- [35] Overall, it seems that the underpass location has been selected based on an assumption that Pet Lodge will disestablish or move elsewhere (as reflected in the report graphic replicated as Figure 3 above). It is only if the site is redeveloped that the desired design attributes for the underpass are achieved. I am unable to identify a scenario whereby the

underpass would meet the expected design criteria set out in the s 32 report with Pet Lodge remaining operational.

Consideration of Alternatives

- [36] It is clear that the s 32 report considered establishing the underpass on the western side of Howards Drive, and that the only reason given for not pursuing this was that a direct route was not formed. However since the location of one major attractor is still not fixed, and the northern ramp of the underpass appears not to be able to be constructed, I have considered whether the underpass could reasonably be located on the western side of Howards Drive.
- [37] No information is presented in the s 32 report that the maximum number of pedestrian and cyclists are generated on eastern side of Howards Drive. There therefore does not appear to be a case that the eastern side should be preferred based solely on the potential number of users of the facility.
- [38] Relocating the underpass towards the west would not appear to inconvenience users by introducing an additional road crossing. If the underpass was towards the east of Howards Drive, those users approaching from the west would need to cross the new road (Collector Type C) to reach the underpass. Similarly, a western underpass would mean that users approaching from the east would need to cross the new road (Collector Type C). In each case, there is an east-west flow across the Collector Type C road, and a signalised pedestrian crossing is already provided to accommodate this movement (as shown on Figure 2).
- [39] A similar scenario arises towards the south, where a proportion of users will inevitably have to cross Howards Drive, whether the underpass is located on the eastern or western side. Again, a signalised pedestrian crossing facility is provided (as shown on Figure 2).
- [40] The shared walking and cycling route along the northern side of the highway extends across the full length of this part of the highway

meaning that pedestrians and cyclists on both the eastern and western sides of the intersection are equally well-served.

- [41] As I noted above, land on the southwestern quadrant of the Howards Drive intersection has been set aside for the purposes of an intersection improvement. At this stage, there do not appear to be any constraints to constructing an appropriate ramp on the southern side as there are no structures within this area. There are similarly no constraints on the northern side, as the land on the northwestern side of the intersection is undeveloped, and there would be no need for any angles or bends in the underpass.
- [42] While I acknowledge that an underpass on the western side of the intersection might require use of third party land (within the Queenstown Country Club), this land is used only for landscaping. Conversely, an underpass on the eastern side of the intersection also requires the use of third party land (Pet Lodge) where the land required is occupied by structures that I understand are necessary for the operation of the business.
- [43] On balance, if the presence of Pet Lodge is taken into account, along with the uncertainty associated with the location of key pedestrian and cyclist attractors, I do not consider that there are any transportation reasons for preferring an underpass on the eastern side of Howards Drive. Rather, in my view the more appropriate solution from a transportation perspective would be for the underpass (the Key Crossing) to be located on the western side.
- [44] If the underpass was to be relocated, this then means that the Crossing Curtilage Area Overlay would need to be relocated also. In my view, the provisions of the Variation are appropriate insofar as they allow for the location of the Key Crossing to be adjusted if needed, and limit the ability for development to occur until the Key Crossing is in place. However relocating the Overlay towards the west would mean that access to Pet Lodge would not be encumbered by the Overlay.
- [45] By way of two final points, I firstly highlight that the nomenclature of 'Key Crossing' suggests that it is somehow superior or more heavily used

than other crossing locations. However there appears to be no supporting technical argument that this is the case. The s 32 report shows five other pedestrian/cyclist crossing locations (indicated on Figure 2 above), which are spread out over the frontage of the Ladies Mile area. These provide multiple opportunities for crossing the highway and road users are not channelled towards the Key Crossing but instead are able to cross at the location that most suits for their journey. On the information presented, I can see no reason why demand for crossing at the Key Crossing would be considerably greater than in other locations.

- [46] Secondly, I consider that there is a mismatch between the introduction of the Crossing Curtilage Area Overlay and the road to the immediate west (Collector Type C). For the reasons set out above, I do not consider that the Key Crossing is correctly located but ***if*** it was to be retained, then the Crossing Curtilage Area Overlay would remain as notified and the provisions associated with this then affects the operation of Pet Lodge and its current access.

Council's Section 42A Report

- [47] I have reviewed the report of Mr Brown, the consultant planner to the Council insofar as he comments on Pet Lodge.
- [48] In his paragraph 11.209, Mr Brown sets out that in response to the Pet Lodge submission, *"the structure plan was modified so that the Key Crossing now only lies within the SH6 road corridor. It is accessible to pedestrians and cyclists without needing access across any part of the Pet Lodge property"*.
- [49] Given that the underpass lies 4m below ground (s 32 report Appendix D page 20) and that the gradient of the ramps can be no more than 1 in 12 to meet the Building Act, then the access ramp on the northern side of the highway must be a minimum of 48m long. This cannot be accommodated within the legal highway without introducing at least one (and more likely three) 90-degree turn. However the s 32 report sets out that *"bends and angles should be avoided"* at underpasses (Appendix D page 20) due to issues of crime, anti-social behaviour and concerns for personal safety.

[50] In my view then, the solution presented in the s 42A report therefore does not achieve the outcome sought in the s 32 report.

Conclusions

[51] Having reviewed the reports, I am unable to find a compelling reason why the Key Crossing should be located towards the east of the Howards Drive intersection and in my view there are good reasons why a location to the west of the intersection could be progressed instead. Relocating the Key Crossing in this manner would then minimise effects on Pet Lodge associated with the Crossing Curtilage Area Overlay.

Andrew David Carr

19 October 2023