Dave Smith response to TPLM Hearing Panel transportation questions

Technical Note 2

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Hearing Panel Question Responses

In response to a request from the Te Pūtahi Ladies Mile (TPLM) Hearing Panel during my time on the stand on 8th December 2023, this technical note presents Waka Kotahi's response to additional transportation questions. I have prepared the responses to questions 1-3 and the responses to questions 4-6 have been prepared by Mr Sizemore of NZ Transport Agency Waka Kotahi.

1. *Formally document the matters I elaborated on when on the stand.*

   a) *Status of NZUP Queenstown Package*

   SH6/6A intersection upgrade, the Frankton bus hub and SH6/Howards Drive intersection upgrade will start delivery in early 2024 and will take in the order of two years to complete. NZ Transport Agency Waka Kotahi are committed to deliver the full NZUP Queenstown package however the timing of implementation is uncertain.

   I note the Queenstown Package was included in the National Party Transport for the Future pre-election document so I would expect this would also be included in the GPS for Land Transport Funding to be released in the first 90 days of Government.

   b) *Did the Queenstown Transport Business Case (QTBCs) include TPLM?*

   1100 households were included on Ladies Mile in the QTBCs modelling and assessment.

   c) *Why was the full NZUP programme to the west of the Shotover River not included in the TPLM modelling amended to Mr Shields evidence?*

   The only components not included were the SH6/Grants Road and SH6/Hawthorne Drive intersection upgrades. The version of the Tracks software that the model currently uses provides a coarse representation of multi-lane roundabout modelling (more recent versions are much improved). Limitations include not taking into consideration the impact of short approach and exit lanes, lane configurations and merge behaviour. As such I consider that the roundabouts in the model operate far better than the actual performance. I am not aware of finalised NZUP signal designs for these two intersections and have concluded that the impact of

these intersections remaining coded as roundabouts (rather than as signals) is inconsequential in the context of the assessment of TPLM.

As per my primary evidence I recommended that Mr Shields model the key SH6 intersections including those on the west of the Shotover Rover using Sidra Intersection software to provide a more detailed and robust assessment of intersection performance.

d) Provide more details of how the TPLM schools are represented in the model.

This request was to an extent addressed in my response which was included as Appendix B to the response note prepared by Mr Shields dated 7 December 2023. Subsequent to the preparation of this response I have investigated the traffic generation and distribution associated with the two TPLM schools (in aggregate) as follows:

i. There are 345 inbound vehicle driver trips from homes to schools in TPLM in the weekday morning peak;

ii. 21% of these come from Shotover Country and Lake Hayes Estate;

iii. 51% are from within TPLM;

iv. 16% are from elsewhere in the Wakatipu Basin (including Arrowtown);

v. The remaining 13% (or 45 trips) are from west of the Shotover Bridge.

e) Acknowledging Council has signalled a new model is to be scoped, developed and delivered, is the Tracks model fit-for-purpose?

The Queenstown-Lakes Tracks Transportation Model is a strategic model and has in my view served the District well since it was developed in the mid-2000s. Strategic models are typically used to understand the impact of land use developments of this scale and on this basis I consider it to be fit-for-purpose. There are more detailed microsimulation models available that have been used in previous business case work however the current and future levels of congestion along SH6 is so extensive that the results of these models become somewhat meaningless. For this reason, the microsimulation models have not been used and I have recommended Sidra Intersection be applied to supplement Tracks and enable a more detailed understanding of key intersection performance.

In conclusion I consider that the correct and most appropriate modelling tool has been used for this assessment and it is fit-for-purpose. I am also aware of some new models developed elsewhere in New Zealand which do not necessarily provide more reliable results then older tried-and-tested models that have been invested in and improved over time.

2. Provide a comparison of 2023 surveyed traffic volumes against an interpolated 2021-24 modelled traffic volume in the vicinity of TPLM.

The comparison of interpolated 2023 model flows and observed data including GEH statistics are included in the table on the following page.

The observed results have been calculated from the TMS count stations 00600993 and 00600991 (SH6 to the west and east of the Shotover Bridge respectively) average hourly flows across all March 2023 weekdays. The modelled and observed flows align well other than the morning peak eastbound flow to the west of the Shotover Bridge wherein the model is light and under-representing traffic volumes. This is the non-tidal flow direction (that is counter to the main westbound flow of traffic) so is not considered to be as critical and results in a model which is slightly conservatively low.

Location	2023 AM Observed	2023 AM Interpolated Model	AM Change	AM GEH	2023 PM Observed	2023 PM Interpolated Model	PM Change	PM GEH
00600993 SH6 E of Hardware Lane (WB)	1260	1387	127	3.5	949	923	-26	0.9
00600993 SH6 E of Hardware Lane (EB)	818	615	-203	7.6	1472	1574	102	2.6
00600991 SH6 E of Stalker Rd (WB)	865	902	37	1.2	791	727	-64	2.3
00600991 SH6 E of Stalker Rd (WB)	596	500	-97	4.1	906	989	83	2.7

3. *How will stormwater be managed when kerb and channel installed on SH6 Ladies Mile?*

The design of the proposed westbound bus lane has kerb and channel with sumps draining to soakpits for stormwater disposal. This would be an acceptable solution for the remainder of the Ladies Mile as the area is overlain with alluvial gravels providing high soakage rates which would adequately deal with road runoff.

4. *To what extent is bus priority (if at all) incorporated into the Stage One NZUP package? Of particular note here was in the vicinity of SH6/6A.*

There are some bus priority measures incorporated into the design of the Stage 1 works, primarily focused on efficiently moving buses through the SH6/SH6A intersection and in and out of the Frankton bus hub. The bus lanes on SH6 in Frankton are part of a subsequent stage.

5. *Is SH6 along Ladies Mile an over-dimension route?*

Yes – there are no alternative routes.

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