

9 June 2022

Maryhill Limited
C/- The Property Group
PO Box 2130
Wakatipu
Queenstown, 9349

Attention: Katrina Ellis

Dear Katrina,

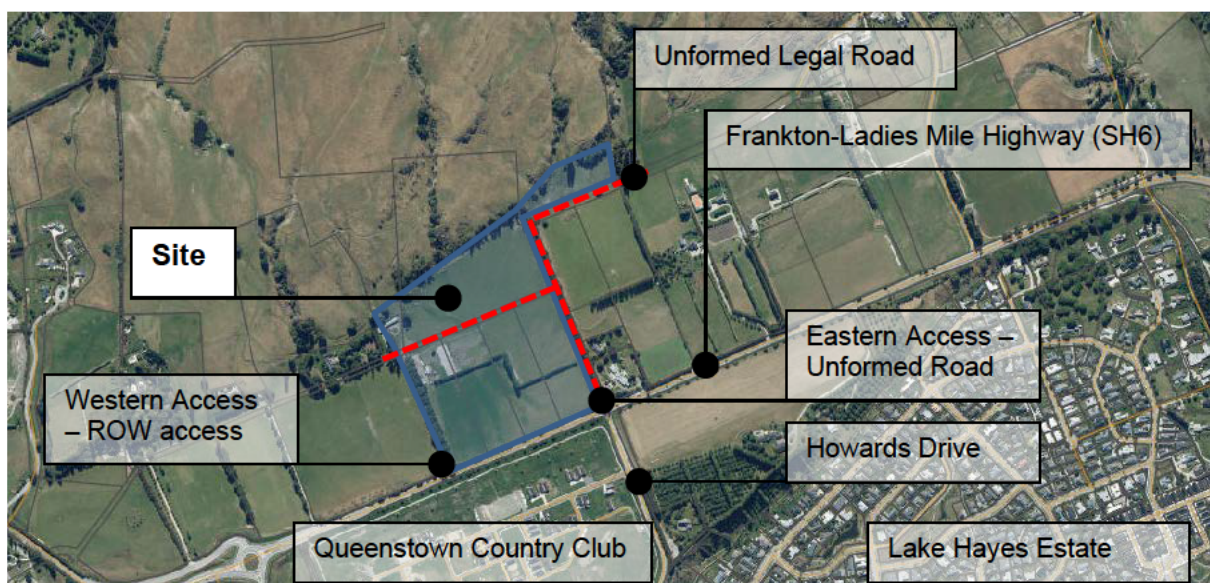
Glenpanel Residential Development Frankton-Ladies Mile Highway (SH6) Transport Assessment

The purpose of this letter is to provide a high level transport assessment for Glenpanel, a proposed residential development which would be accessed from Frankton-Ladies Mile Highway (SH6).

1 Background

The site has two existing accesses from Frankton-Ladies Mile Highway (SH6). This includes a western access which is a shared access (Right of Way, ROW) which also serves 429 Frankton-Ladies Mile Highway (Glenpanel Homestead) and other land to the west (Flints Park site). An eastern access is an unformed legal road located opposite Howards Drive. The site, existing accesses and unformed legal roads are shown in Figure 1 below.

Figure 1 – Site Location, image from QLDC webmaps



Under the QLDC Proposed District Plan (PDP) the site is generally within the Rural Lifestyle zone. QLDC are considering a masterplan for this land to create a new residential zone (Te Pūtahi Ladies Mile), the provisions of which are being refined by QLDC.

2 Transport

2.1 Road Network

The site includes unformed legal roads including one which connects to the existing intersection of SH6 with Howards Drive, the eastern access. Currently this site access is rarely used as it requires vehicles to manoeuvre at the existing T-intersection.

Frankton-Ladies Mile Highway (SH6) is an arterial road and a regional state highway providing a major inland transport route. The road is managed by Waka Kotahi (NZTA) and is a Limited Access Road (LAR).

Traffic flow data for SH6 is collated by Waka Kotahi, Table 1 below provides a summary of the latest traffic count data nearest to the site. This traffic count data is provided as Average Annual Daily Traffic (AADT).

Table 1 – SH6 Traffic Count Data, source Waka Kotahi, State Highway Traffic Volumes 2016-20

Site	2016	2017	2018	2019	2020
SH6 – Shotover-before Lower Shotover Rd, ID:00600991	14093	15792	16882	17168	15068

This traffic counter site is located immediately to the west of the site access and provides a good representation of the traffic passing the site. The traffic count data shows a significant drop in the recent traffic data as a result of the Covid19 pandemic with border restrictions and reduced foreign tourism. The current (2021) traffic flow at the site is likely to be approximately 16,000vpd. It is possible that traffic flows will increase once borders open and international tourists return.

At the site SH6 has a posted speed limit of 100km/hr which reduces to 80km approximately 400m to the west of the site approaching the Lower Shotover Roundabout.

There are a number of potentially changes and improvement proposed on SH6 and the local road network, these include:

- A roundabout intersection at Howards Drive which has committed funded as safety improvement works and will be opened in 2024. This will form a direct access to the site at the eastern access via an unformed legal road.
- Possible central barriers which may be installed along the centreline of SH6 generally between Lake Hayes and Hawthorn Drive. This would restrict any minor accesses, such as the western access, to left in/left out only. It is noted that recent discussion with Waka Kotahi suggests that this project may not progress,
- SH6, priority bus corridor which will require the widening SH6 to provide bus lanes to reduce bus journey times. This is an essential project to improve public transport services to the communities of Lake Hayes Estate, Shotover Country, Queenstown Country Club and the emerging communities at Kawarau Heights and Ladies Mile. In the long term this may include park and ride facilities and will allow for increased bus frequency.
- Speed limit review, Waka Kotahi is currently undertaking a network speed limit review which may recommend speed limit changes on SH6 at the site.

- Development of a residential housing zone (Te Pūtahi Ladies Mile) at the site which would facilitate a greater level of residential development and assist with the transition to greater use of public transport services. The emerging residential developments within Te Pūtahi include Flints Park and Flints Park West.
- Flints Park (immediately to the west) has an approved consent for a café/gallery at the Glenpanel homestead and is being progressed as a residential development through an application to the EPA, following approval to do so from MFE. If either of these land uses proceed a new access intersection from SH6 will be formed.
- Flints Park West is located approximately 600m to the west and is being progressed as a residential development through an application to the EPA, following approval to do so from MFE. If this development proceeds it is possible that it will include the realignment of Lower Shotover Road and form an access from the SH6 Lower Shotover Roundabout.

2.2 Public Transport

Local bus services are operated by Otago Regional Council (ORC), there are two existing bus services which pass near to the site these are:

- Route 5, Queenstown – Lake Hayes Estate. This route passes through Lower Shotover Roundabout approximately 600m to the west of the site whilst the nearest bus stop is located approximately 600m to the south of the site on Jones Road between Shotover Country and Lake Hayes Estate. This service operates an hourly service between 6am and 10pm increasing to a half hour frequency 6am to 9am and 3pm to 7pm.
- Route 2, Arthurs Point – Arrowtown. This route passes along Frankton-Ladies Mile Highway (SH6) adjacent to the site although there are no bus stops on this route near to the site. This service operates an hourly service between 6am and 10pm increasing to a half hour frequency 6am to 9am and 3pm to 7pm.

Either of these services could be diverted to allow a service between the site and Queenstown with an interchange in Frankton allowing changes to other services and destinations within the Wakatipu region.

2.3 Walking and Cycling

The nearest walking and cycling trail is located adjacent to SH6, opposite the site. This trail provides links to the residential areas Lake Hayes Estate, Queenstown Country Club and Shotover Country. This trail also provides links to the Queenstown Trails Network at the Lower Shotover Roundabout which provides off road links to Frankton and other destinations in the Wakatipu region.

It is noted that a pedestrian and cycle underpass is proposed at the Howards Drive roundabout which would provide a grade separated crossing under SH6. Funding for this has been approved through a 2019 application to the Housing Infrastructure Fund (HIF). Currently there is no commitment to construct this underpass and it is unknown if it is possible to integrate this into the current Howards Drive Roundabout safety improvements project.

2.4 Park and Ride

The Way To Go partnership (QLDC, Waka Kotahi and Otago Regional Council/ORC) have considered a number of park and ride sites options in the region. The purposed of these sites is to allow users to park their car and continue their journey to Frankton or Queenstown by bus. Essentially this would free up some capacity on SH6 and Frankton Road (SH6A) between the park and ride side and Queenstown town centre.

If combined with bus priority on SH6 and SH6A this can result in more reliable journey times and as congestion builds in the road network can result in increased bus frequency, consistent journey times and the ability to move a greater number of people between Ladies Mile and Queenstown town centre than is possible with the existing car based transport network. Way To Go have looked at a number of possible park and ride sites within the Ladies Mile Area including the QLDC reserve at 516 Ladies Mile adjacent to the site. At this stage there is no firm commitment to implementation or future timing of Park and Ride services.

3 Proposed Development

It is proposed to develop the site to create a maximum of 748 dwellings. There are other scenarios currently being reviewed, being either:

- 748 residential dwellings,
- 554 residential dwellings and a retirement village with 215 dwellings as a combination of care units (apartments) and villas/duplex, or
- 630 residential dwellings and a school (for a maximum of 900 students).

The residential dwellings proposed will include a variety of housing types, the masterplan provides the overall site layout and density.

The proposed development will be accessed from the proposed roundabout at the intersection of SH6 with Howards Drive. This new roundabout intersection is being progressed by Waka Kotahi and will be opened in 2024 and the Applicants have been working with Waka Kotahi to provide land to enable this Waka Kotahi project to proceed.

4 Transport Effects

The greatest traffic effect is likely to be a result of increased traffic in the peak commuter periods. The greatest traffic effect is therefore likely to be a result of a maximum of 748 residential dwellings as the alternative scenario will have a reduced transport effect during the peak commuter periods or will have a number of internal trips within the Te Pūtahi Ladies Mile area without impacting on the adjacent SH6.

This proposed development will be accessed directly from SH6 using the new roundabout intersection at Howards Drive. The design of this roundabout will allow for a fourth approach from the site which will utilise the existing unformed legal road.

4.1 Road Networks

4.1.1 Traffic Generation

The proposed development may result in a peak traffic effect of up to a maximum of 748 residential dwellings. Based on other suburban residential developments in the Wakatipu region the development may result in a possible average traffic generation 4900vpd with a possible peak period traffic generation of approximately 500vph¹. The peak traffic generation

¹ Based on Based on traffic flow data from Jacks Point which has an average daily traffic, per dwelling, of 6.5vpd or 0.66vph during the am peak period. Traffic data is collected over 305 days during the 12 months to the 31st July 2018. This is similar to weekly traffic counts at Lake Hayes Estate (Howards Drive) Shotover Country (Stalker Road) and similar data can be reviewed from Hanley's Farm (Jack Hanley Drive).

will reduce if part of the site is developed as a school or retirement village this is because these activities will have a reduced overall traffic generation.

It is noted that the 2019 Housing Infrastructure Funding (HIF) considered a possible 1100 residential dwellings equivalents at Ladies Mile with minimal public transport or active transport interventions. The current QLDC masterplan and possible plan change, Te Pūtahi Ladies Mile, is now considering a possible 2400 residential dwelling equivalents in this same area although this will require infrastructure to enable approximately 30% reduction in traffic generation through trip suppression or modal shift away from the private car to public transport and active transport.

When considering the other possible residential development (Flints Park and Flints Park West) it is likely that Glenpanel will increase the result in between 1100 and 2400 residential dwellings within the Te Pūtahi Ladies Mile masterplan area. This means that any residential development must consider include infrastructure to encourage and drive a shift towards public transport and active transport for local trips.

4.1.2 State Highway Network (SH6)

The state highway road network has a number of possible improvements to manage growth at the Ladies Mile. This includes the proposed Howards Drive roundabout which would form the development access. In addition, proposals include the provision of bus lanes on the state highway and safety improvements such as central barrier. Proposals also include crossings for pedestrians and cyclist over SH6 to provide better connections between the northern side of SH6 (Te Pūtahi Ladies Mile) and the existing residential areas of Lake Hayes Estate, Shotover Country and Queenstown Country Club to the south.

The significant constraint on the state highway is the Lower Shotover Bridge. The single lane in each direction at the bridge results in traffic congestion and queuing during the peak periods. There are no proposals to resolve this traffic constriction or relieve congestion. The current transport strategy is to improve other transport networks and encourage a shift from the current reliance on private vehicle to other transport modes such as public transport (bus services), walking and cycling.

The proposed development is likely to add to current state highway congestion at the Lower Shotover Bridge. Initiatives within the development can encourage the shift to other transport modes or to reduce the need to travel. This can include the establishment of commercial and community facilities within Lake Hayes Estate, Shotover Country and Queenstown Country Club or the emerging Te Pūtahi Ladies Mile in order to reduce the need to travel between the Ladies Mile area and Frankton.

It is possible to integrate a temporary Park and Ride facility at the site by utilising a super lot ahead of the development of these sites. The development of a Temporary Park and Ride at the site would have the benefit of reducing through traffic on SH6 whilst also providing a opportunity to increase bus frequency and levels of service to the Ladies Mile area. which will also benefit the existing residential areas of Lake Hayes Estate, Shotover Country and Queenstown Country Club.

4.1.3 Internal Road Network

The masterplan site layout provides a simple internal road network. It is anticipated that this will be based on the requirements of the current NZ Standard (NZS4404:2010) and the QLDC Land Development and Subdivision Code of Practice based on that standard. IT is expected that the reference road cross sections will be modified to reduce vehicle speeds within the internal road network.

The NZS/QLDC Land Development and Subdivision Code of Practice provides definitions of place and link context². The overall density of this residential development fits within the definitions of 'urban'. Based on the residential nature, 'live and play', the internal road network will be designed with these contexts in mind. The development will generally be high density residential living with a lower priority for the provision of residential parking with allowance for public transport, walking and cycling within the internal road links.

The road network provided allows for connections to adjacent properties to the east and west which are owned by others. Immediately to the west Flints Park is developing their concept design, the linkages shown to the west generally align with the adjacent Flints Park road network. Land to the east is likely to include commercial and retail to serve the residential areas of Te Pūtahi Ladies Mile and other neighbouring residential areas. The general road network and connections aligns with the QLDC, Te Pūtahi Ladies Mile, masterplan. This suggests that there will be a need for higher level connector/collector roads running east-west within the greater Te Pūtahi Ladies Mile masterplan with an additional connector/collector linking to SH6 at the Howards Drive Roundabout, these roads will also become the predominant public transport routes.

Within medium density residential areas of the Wakatipu parking has been a concern, The minimum car parking provisions of the District Plan have been removed in line with the National Policy Statement for Urban Development (2020). However, the QLDC Land Development and Subdivision Code of Practice still requires that 1 car park space per dwelling within the road network. This is potentially in conflict with the emerging Te Pūtahi Ladies Mile transport provision and the which is based on maximum car parking number to encourage modal shift to public transport (buses) and active travel transport (walking and cycling).

The Te Pūtahi Ladies Mile, in line with the National Policy Statement on Urban Development, allows for the consideration of reduced parking to encourage other transport modes or ways of living leading to a reduced the need for a private vehicle. These are elements which will be considered within the overall design as this progresses.

Overall, the internal road network will be based on current guidance with opportunities to reduce overall car parking with the provision of increased public transport, walking and cycling to encourage a move away from the dependency on the private vehicle or need to travel.

4.2 Public Transport

4.2.1 Bus Routes

The Otago Regional Council (ORC) operate the Orbus network which provides bus service which connect the residential areas of Queenstown and the Wakatipu region. It is expected that as populations within some of these areas increase, including the Ladies Mile, that the number of bus services will increase.

In the long term it is likely that a bus service would serve the Ladies Mile area. This could be undertaken by diverting one of the existing services via Glenpanel and the proposed Howards Drive roundabout. A long term route may include a number of residential areas between Lower Shotover Road to Glenpanel including Flints Park.

In the short to medium term it is possible that one of these existing services could be diverted into the proposed development with bus stops and turning provided within the proposed

² Refer QLDC Land Development and Subdivision Code of Practice, Section 3.2.4 Place and link context and Table 3.1 – Land use and area type matrix describing typical place and transport context.

residential area. This would mean that the road network will need to consider a bus vehicle as a design vehicle for at least the connector/collector road network.

It is possible to provide bus stops within the site so that walking distances can be minimised, it is possible that a single bus stop within Glenpanel could be located within 400m of all proposed residential dwellings. 400m is seen as a maximum convenient walking distance to a bus stop. If necessary, bus stops can include shelters so that waiting for a bus is comfortable to encourage this travel mode.

The higher the uptake of public transport the reduced traffic effect on the surrounding state highway network. The design of the subdivision can include for convenient and comfortable bus stops and allow for bus vehicles within the internal road network.

4.2.2 Temporary Park and Ride

It is proposed to utilise super lots as a temporary park and ride facility. A super lot could conservatively accommodate 130 car park spaces. This would provide a temporary park and ride facility to allow the proposals of Way To Go to be trailed in order to gain an appreciation of efficiency and effectiveness ahead of implementing any permanent park and ride facilities at Te Pūtahi Ladies Mile. There are a number of benefits to implementing park and ride facilities as Glenpanel develops:

- The planned Howards Drive roundabout access from SH6 will provide an efficient means for users to access the site from the state highway network.
- The planned SH6 priority bus corridor provides bus lanes between the site and Queenstown town centre providing an efficient bus service with reliable journey times.
- The temporary site can provide increased demand for public transport services ahead of residential development within Te Pūtahi Ladies Mile justifying increasing bus frequency ahead of residential development.
- A temporary Park and Ride can be used to investigate the overall benefits of a park and ride facility ahead of any permanent funding commitment and will assist in achieving the PT initiatives to enable development of more than 1100 dwellings at Te Pūtahi Ladies Mile.

It is noted that any Park and Ride facility at the site will be temporary using super lots within the development ahead of construction of dwellings. The overall efficiency and effectiveness of this temporary facility can be used when assessing sites for a permanent Park and Ride facility as Te Pūtahi Ladies Mile develops.

4.3 Walking and Cycling

Walking and cycling provides community health benefits, when used for commuting or to access community facilities and will reduce the reliance on the use of the private vehicle. To promote walking and cycling as modes of transport there will need to be high quality infrastructure which is convenient and enjoyable to use. Often this means considering pedestrian and cycle routes which are away from other vehicular traffic with end of trip facilities at destinations.

Glenpanel is within 5.0km of the commercial, retail and community services provided at Frankton and approx. 5.5km from commercial and retail at Remarkables Park. Routes to these destinations are predominantly provided using off-road trails which are part of the Queenstown Trails Network. The current popularity of e-bikes means that commuting between residential areas such as Glenpanel to employment, retail and community activities at Frankton becomes realistic for a greater number of users.

To encourage walking and cycling the design the proposed development should consider:

- Low speed street networks to allow cyclists to share the street with vehicles,
- Provision of footpaths and wider shared paths so that pedestrian and cyclists do not need to share the street with vehicles,
- Good connections with the surrounding network, for instance working with Waka Kotahi to establish crossings over SH6 to link with existing pedestrian and cycle networks,
- Consideration of community facilities and essential retail (small format grocery, etc.) within the Te Pūtahi Ladies Mile area, and
- Consideration of house design that allow for cycle storage and possibly charging in a convenient way.

It is noted that as part of other projects crossing over SH6 have been considered, although these are not part of current committed projects.

By including convenient and comfortable pedestrian and cycle facilities within the subdivision it is possible the reliance on the private vehicle for short and generally individual trips. Overall, these transport initiatives can have a significant beneficial effect in reduced traffic on the surrounding state highway network and improving community health.

4.4 Transport Alternatives

The Covid19 pandemic has taught our society that there is less of a requirement to commute to some workplaces on a daily basis, particularly for office based occupations. With good communication networks and space to work locally, either at home or with local shared office environments, can reduce the need to travel. Providing high quality internet and mobile connectivity within the subdivision enables residents to work locally. Provision of office facilities within homes or provision of local shared office facilities will reduce the overall need to travel and will result in an overall reduction in the traffic generation and effects on the surrounding state highway network.

5 Summary

It is proposed to develop Glenpanel as a residential subdivision to the north of the Frankton-Ladies Mile Highway (SH6). The proposed subdivision is to be accessed directly from SH6 and relies on the construction of the Howards Drive roundabout which is being constructed by Waka Kotahi with an anticipated opening in 2024.

The proposed development is within the overall growth anticipated in the 2019 Housing Infrastructure Fund Application and the QLDC proposed Te Pūtahi Ladies Mile masterplan and possible plan change. However, given that other residential subdivisions in this area are expected to progress there is a need to consider further measures to reduce transport effects on the state highway network, SH6.

The on-site transport infrastructure is expected to be designed and constructed in general accordance with the NZ Standards and the QLDC Land Development and Subdivision Code of Practice.

The greatest transport effect is the likely impact on exiting and predicted traffic congestion at the Lower Shotover Bridge, currently there are no proposals to improve this. However, it is possible to consider transport initiatives through the development of the masterplan that reduce the dependence on the private motor vehicle for travel, encourage alternative travel modes or the reduce the need to travel, these include:

- Reduce the availability of parking within the built environment and on-street. The National Policy Statement for Urban Development and the emerging transport provision of the Te Pūtahi Ladies Mile allows this approach. This can reduce the convenience of owning and relying on the private car for transport.
- Provision of convenient bus stops and comfortable shelters to encourage the use of public transport to access facilities within Wakatipu region.
- Provision of a footpath network both adjacent to roads and off-road to encourage walking as a convenient and enjoyable mode of travel for local trips within Glenpanel and to the surrounding residential areas.
- Provision of convenient cycle infrastructure include cycle parking and charging at residential sites with the provision of low speed roads and specific cycle routes to allow for cycle commuting to work, retail and community facilities in Frankton and the local area.
- Provision of high quality communication networks and office facilities within the built environment to reduce the need to travel.
- Consideration of temporary park and ride facilities at the site to accelerate public transport uptake, increase demand and service frequency whilst reducing the thought traffic, Arrowtown-Frankton/Queenstown, on SH6.

I consider that these initiatives can be effectively incorporated into the masterplan as this design progresses and will provide an appropriate means to encourage alternative transport modes whilst reducing any potential traffic effects on the adjacent state highway network. As this design progresses there will be a need for:

- Further consultation with Waka Kotahi regarding the progress of the SH6 roundabout intersection at Howards Drive which is critical for access.
- Further consultation with Waka Kotahi regarding the provision of pedestrian and cycle connections with a crossing over SH6 between the site and existing trail on the opposite side of SH6.
- Consultation with Otago Regional Council regarding possible bus routes and stops within the residential development as well as possible demand and servicing of a temporary park and ride if this is included.

Should you require any further information please contact me.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Jason Bartlett", written over a faint, stylized blue line graphic.

Jason Bartlett

CEng MICE, MEngNZ
Transport Engineer