BRACKENS RIDGE

Transport Assessment Report

28 June 2022

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Mt Soho Trust

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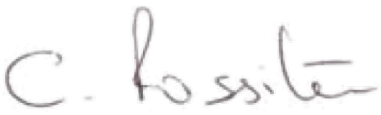
Prepared by: 

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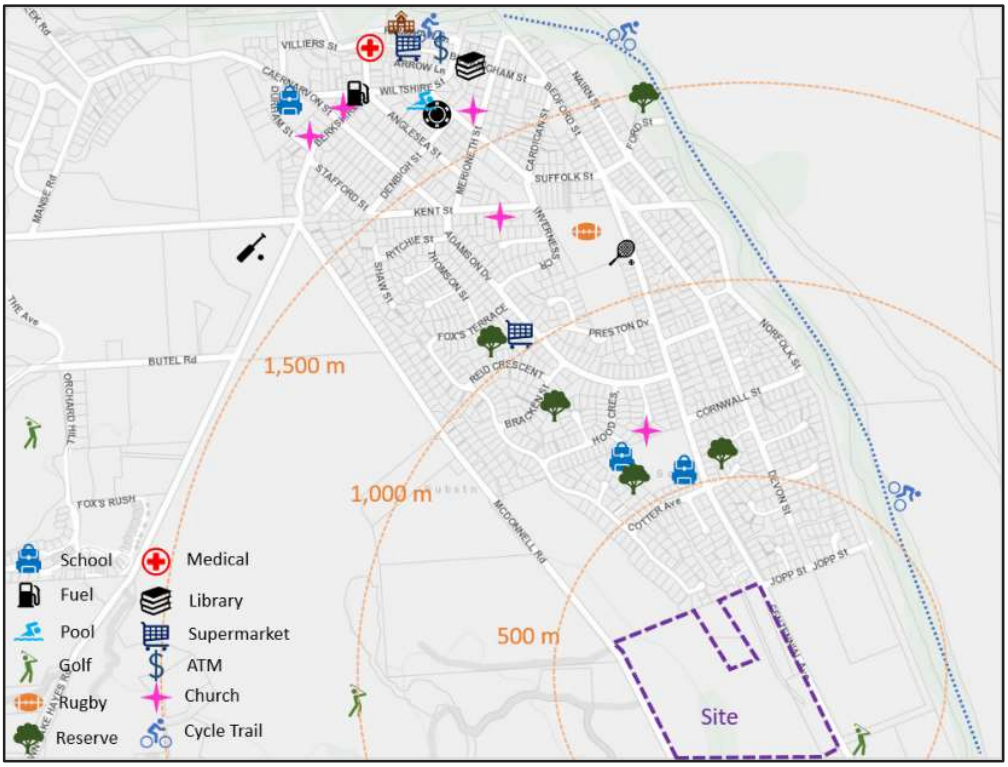
Executive Summary

Mt Soho Trust owns 17.9 ha of land at 175 McDonnell Road, south of Arrowtown, which forms part of the Arrowtown South Special Zone. The rules within the Operative District Plan (ODP) restrict the number of dwellings that can be established with the Rural Living Activity Areas of the Special Zone to 25, and to 17 within the Mt Soho Trust owned land. Mt Soho Trust is seeking resource consent for a higher density of residential development which would enable around 100 residential lots and associated roading to be formed with a range of lot sizes to suit different housing typologies.

The proposed increase in residential development on the Mt Soho Trust land will result in higher volumes of vehicle movement on both McDonnell Road and Centennial Avenue. The increased traffic volumes are well within the capacity of the roads and there are no reasons why the road network cannot continue to operate safely and efficiently.

Access to the existing public transport services within Arrowtown currently involves a walk of 1-1.5 km from the Mt Soho Trust land to reach a bus stop. This can be reduced by extending the bus service route to the site and making provision for a bus stop within the site. This represents a logical extension to the route that will improve access for residents of southern Arrowtown. While changes to the bus route is a matter for Orbus and the Regional Council to address, the road layout within the eastern portion of the site can be designed to accommodate an extension to the bus route and will be consistent with Council strategy to promote greater use of public transport.

The site has direct links to McDonnell Road and Centennial Avenue which provide connections to the wider pedestrian and cycle network. With all of Arrowtown within 2 km of the site, this means that walking and cycling are practical travel mode options for local travel.



The capacity of the Shotover Bridge represents one constraint on peak hour travel in the Wakatipu Basin area. Transport modelling completed prior to the COVID19 pandemic suggested that travel demands at the bridge would be approaching its capacity by 2028. The proposed residential development will represent just one of many contributing sources to traffic growth at the bridge. The amount of growth that could be directly attributed to the development will be influenced by the level to access to public transport and any other travel demand measures implemented by Council.

Overall, increased residential development can be supported from a transport perspective because the site is well connected to the existing transport networks adjacent to existing residential development and would form a natural extension to the Arrowtown urban growth area from a transportation perspective. It is adjacent to the existing urban settlement that provides a range of commercial, service, educational and recreational facilities which will result in a high proportion of local travel. The site layout allows for improved access to public transport if the service route is extended which will make travel to Frankton or Queenstown by public transport a more attractive option than with the current service provision.

Abbreviations

ADT	Average Daily Traffic Volumes
ODP	Operative District Plan
PDP	Proposed District Plan
QLDC	Queenstown Lakes District Council
vpd	Vehicle movements per day
vph	Vehicle movements per hour

1 Introduction

1.1 Background

Mt Soho Trust owns 17.9 ha of land at 175 McDonnell Road, south of Arrowtown, which forms part of the Arrowtown South Special Zone ("Special Zone"). The rules within the Operative District Plan (ODP) restrict the number of dwellings that can be established with the Special Zone to 25, 17 of which are within the land owned by Mt Soho Trust. Mt Soho Trust is seeking subdivision consent to create about 100 residential lots with a range of lot sizes to support different housing typologies.

1.2 Site Location and Context

Figure 1-1 shows the location of the site between the existing Arrowtown residential development to the north and the Arrow Lifestyle Village to the south. The site has frontage to Centennial Avenue which provides the most direct link between central Arrowtown and State Highway 6 (SH6) to the south. McDonnell Road forms the western boundary to the site and connects Arrowtown-Lake Hayes Road with Centennial Avenue. Arrowtown-Lake Hayes Road represents part of the most direct route between Arrowtown and Queenstown via SH6. Malaghans Road provides an alternate route to Queenstown via Arthurs Point and forms part of the Waka Kotahi sign-posted, alternate route to Queenstown for westbound traffic during holiday periods.

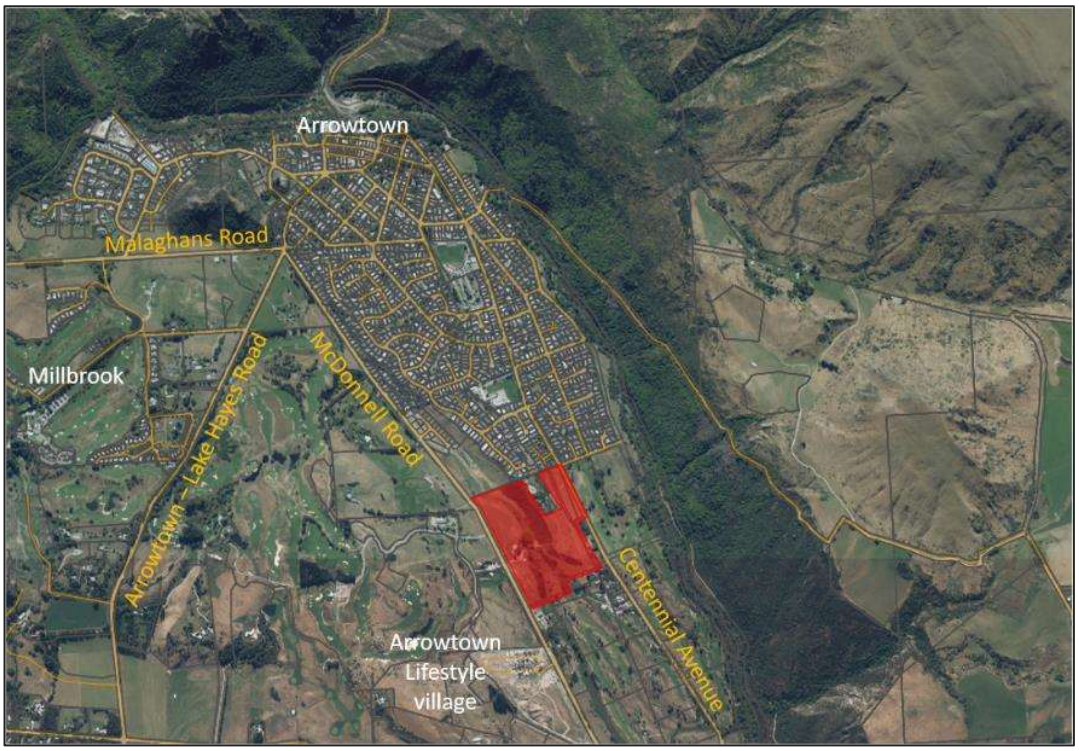


Figure 1-1: Site Location

1.3 Report Structure

This report has been structured to provide an assessment of the potential transport effects of the proposed resource consent application for higher density residential development compared with the permitted level of development under the ODP rules. It provides:

- Description of existing transport infrastructure;
- Description of existing travel patterns;
- Description of proposed residential development; and,
- Assessment of transport effects.

2 Existing Transport Infrastructure

2.1 Road Network

Figure 2-1 shows roads that are classified as Arterial Roads in the QLDC Proposed District Plan (PDP). Arterial roads represent the dominant elements of the transport network and connect major settlements. These roads are managed to minimise their local access function.

SH6 is the only strategic road in the area and links major settlements along the West Coast with Wanaka, Queenstown and Invercargill. Locally, it provides the primary route for travel between Arrowtown and Cromwell to the east and to Frankton to the west. State Highway 6A connects Frankton with central Queenstown.

Centennial Avenue / McDonnell Road and Arrowtown – Lake Hayes Road are the primary connections between SH6 and Arrowtown. Malaghans Road provides an alternative route to central Queenstown via Arthurs Point. Travel distances between central Arrowtown and central Queenstown via Malaghans Road or SH6 are similar but travel times can vary widely across the day. At peak times, congestion on SH6 in the Ladies Mile and Frankton areas can result in long travel times and the Malaghans Road route is often preferred by Arrowtown residents. The Malaghans Road route is signposted as an alternate route to Queenstown from SH6 during the peak holiday periods.

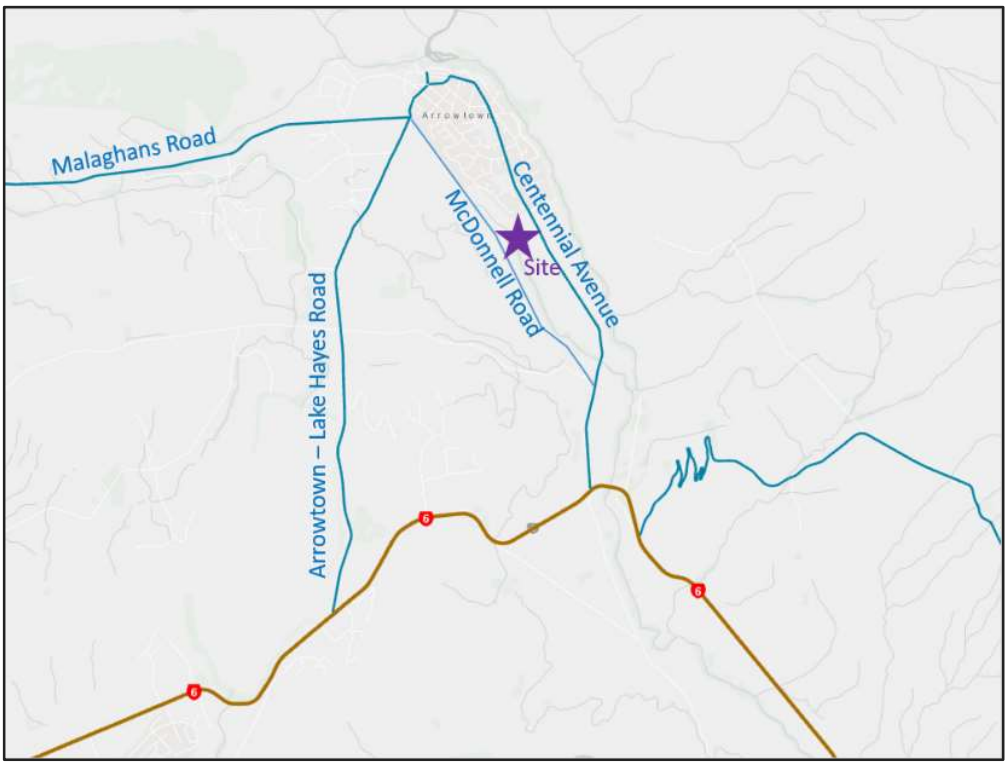


Figure 2-1: Road Hierarchy

McDonnell Road has been constructed as a two-lane road within the existing urban limit and has a footpath on one side of the road only (Photograph 2-1). Speed control humps have been installed

along the urban section of road at spacings of approximately 250 m to encourage drivers to adopt speeds that are consistent with the 40 km/h speed limit.

The urban speed limit threshold reflects the existing urban built environment and is located to the north of the site frontage as shown in Figure 2-2. South of the urban speed limit threshold, the sign-posted speed limit is 80 km/h. The rural section of the road has a generally straight and gently undulating vertical alignment.

There is a gravelled track along the western side of the road that is used by both pedestrians and cyclists. It connects through to the Arrowtown Lifestyle Retirement Village approximately 700 m south of the site.

Photograph 2-1: View of McDonnell Road (urban)

Photograph 2-2: Views of McDonnell Road (rural)

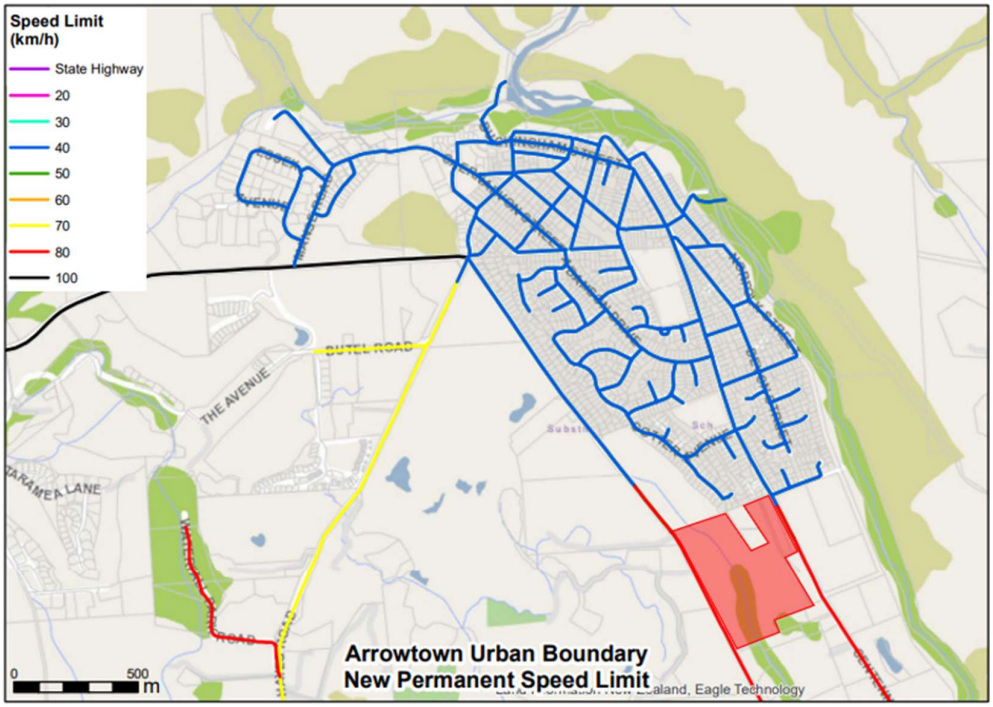


Figure 2-2: Arrowtown Speed Limits

Centennial Avenue has been constructed as a two-lane road with a 6.5 m wide carriageway with painted centre line and edge lines on the rural section of road as shown on Photograph 2-3. The road has a generally straight alignment and has a gentle downhill gradient heading away from Arrowtown.

Photograph 2-3: Views of Centennial Avenue

2.2 Public Transport Network

Figure 2-3 shows the existing public transport routes between Arrowtown and Frankton Hub. There is only one bus route which operates through Arrowtown. Orbus Route 2 (Arthurs Points to Arrowtown) provides the only public transport connection from Arrowtown to Queenstown via the Frankton Hub. From Queenstown, the route continues to Arthurs Point.

The bus route follows Arrowtown-Lake Hayes Road between SH6 and Arrowtown, then Centennial Avenue and Adamson Drive to the Arrowtown route terminus at Reed Park. Figure 2-4 shows 1 km and 2 km walking isochrones from the Reed Park terminus which indicate that travel to the bus stop from the site would involve a walk of at least 1 km.

The service operates with a 30-minute headway during the peak commuter periods, 6.00-8:00am and 4:00-7:00pm, and 60-minute headway during the day.

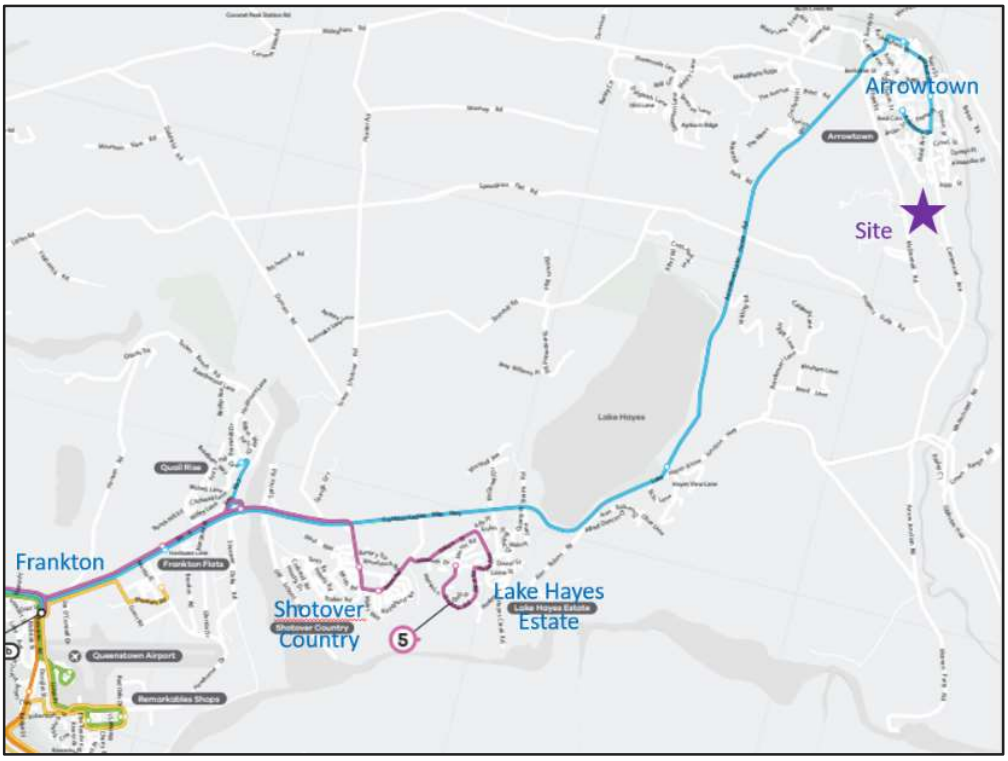


Figure 2-3: Public Transport Network (Source: Orbus)

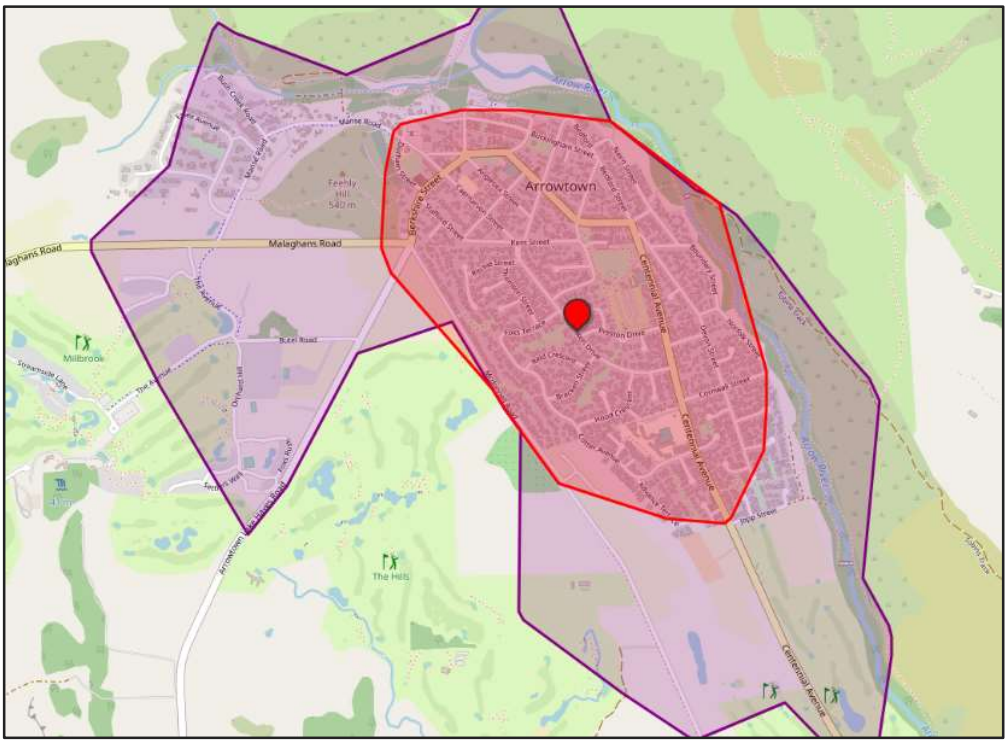


Figure 2-4: 1 km and 2 km walking isochrones to Reed Park Terminus

2.3 Pedestrian and Cycle Networks

Figure 2-5 shows the network of major cycle trails close to Arrowtown. The network includes a wide range of trail types from recreational to expert. The trails around the Wakatipu Basin between Arrowtown and Frankton are primarily recreational and include the Arrow River Bridges Ride (southeast), the Countryside Trail (southwest) and Lakes Hayes Track. The Countryside Trail forms part of a route connecting Arrowtown with Queenstown Airport and Queenstown via Frankton. The distance from Arrowtown to Queenstown Airport is about 18 km. Although this may be a greater distance than many cyclists would consider acceptable, the popularity of e-bikes would reduce the reluctance of using this trail to commute.

The Queenstown Trails Trust has recently received approval from QLDC to commence work on a new cycle route connecting Arrowtown to Arthurs Point and Tuckers Beach.

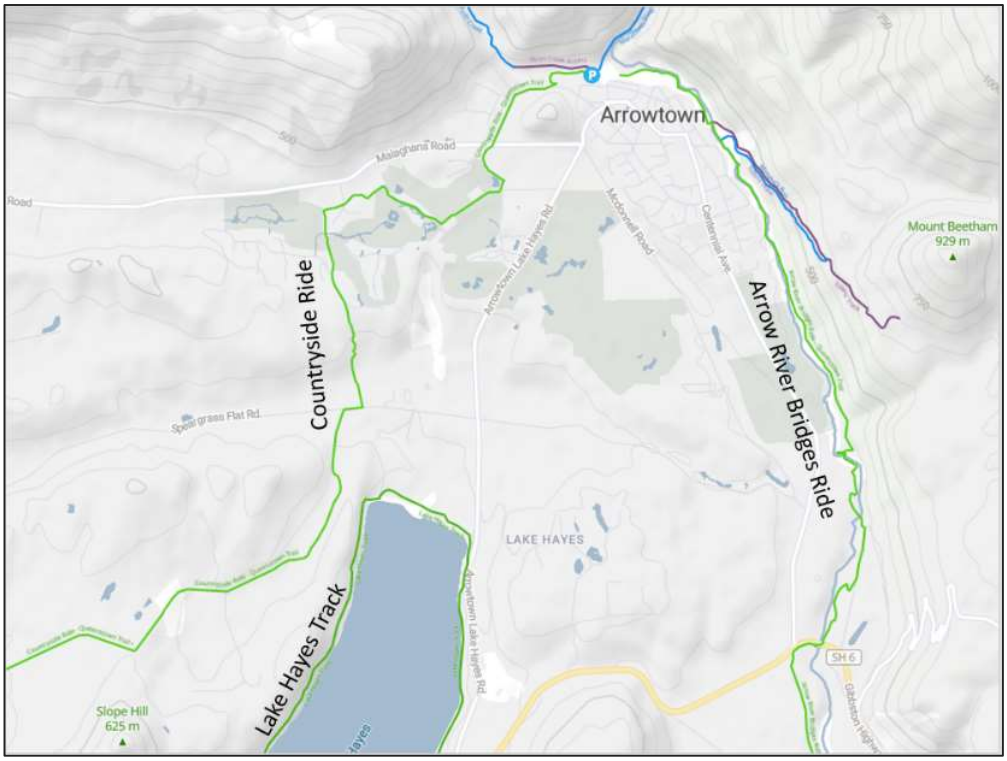


Figure 2-5. Cycle Network Map (Source: Trail Forks)

The pedestrian network in the vicinity of the site includes an unsealed gravel footpath on the western side of Centennial Avenue which continues north to the Arrowtown Town Centre (Photograph 2-3). A similar provision is located on the western side of McDonnell Road. Photograph 2-2 shows the unsealed gravel path that extends from the Arrowtown Lifestyle village south of the site to a point about 300 m north of the site. A sealed footpath is provided on the eastern side of the road from that point to the north as far Arrowtown-Lakes Hayes Road (Photograph 2-1).

3 Existing Travel Patterns

3.1 Traffic Volumes

Waka Kotahi collects traffic count information on the state highway network and has count sites on SH6 east of the McDonnell Road intersection (Site 00600984) and west of the Arrowtown Lake Hayes Road intersection (Site 00600988). Figure 3-1 and Figure 3-2 show the daily traffic volumes recorded at both sites over the three-year period 2019-21 inclusive.

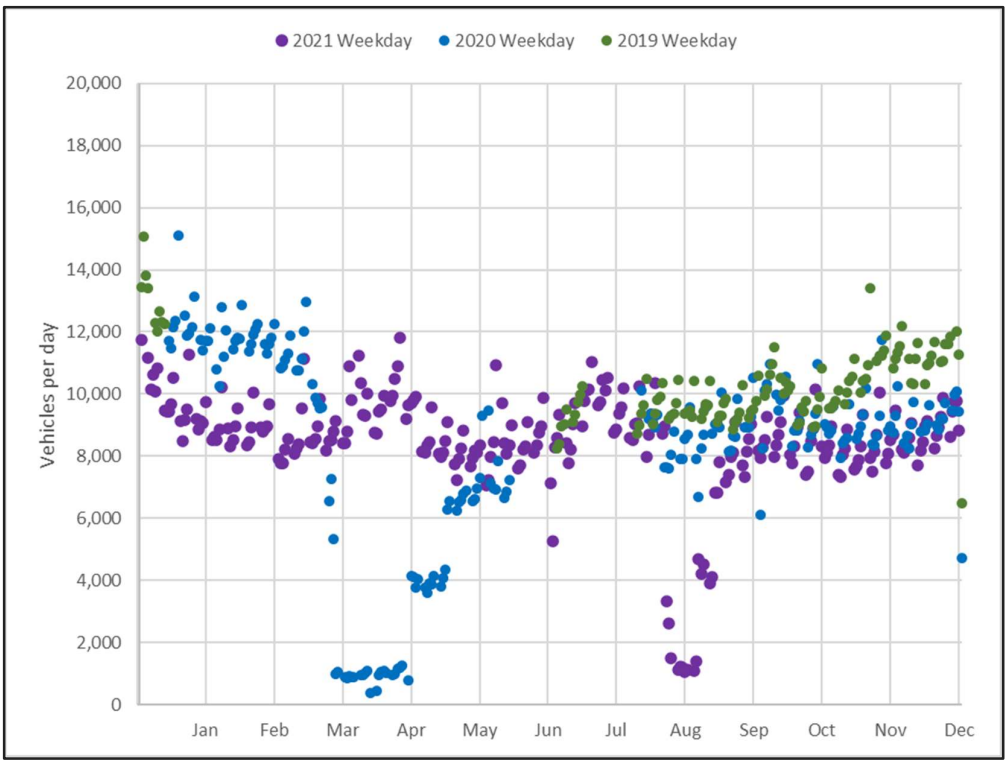


Figure 3-1: Daily Traffic Volumes on SH6 East of McDonnell Road, 2019-21

While there is a gap in the 2019 count information, there is evidence of a seasonal variation in traffic volumes with the highest volumes occurring in summer and the lowest volumes occurring during the winter. Traffic volumes in April-May 2020 and August 2021 were affected by the COVID19 lockdowns.

Daily traffic volumes east of McDonnell Road in December 2021 were about 8,000 vehicle movements per day (vpd) compared with about 11,000 vpd prior to the COVID19 pandemic. A similar difference in daily traffic volumes was recorded west of the Arrowtown Lake Hayes Road intersection with volumes of about 12,000 vpd being recorded in December 2021 compared with about 15,000 vpd in 2019.

The peak hour, two-way volumes on SH6 west of the Arrowtown Lake Hayes Road were 1,200-1,300 vehicle movements per hour (vph) in 2021 compared with over 1,400 vph in 2019.

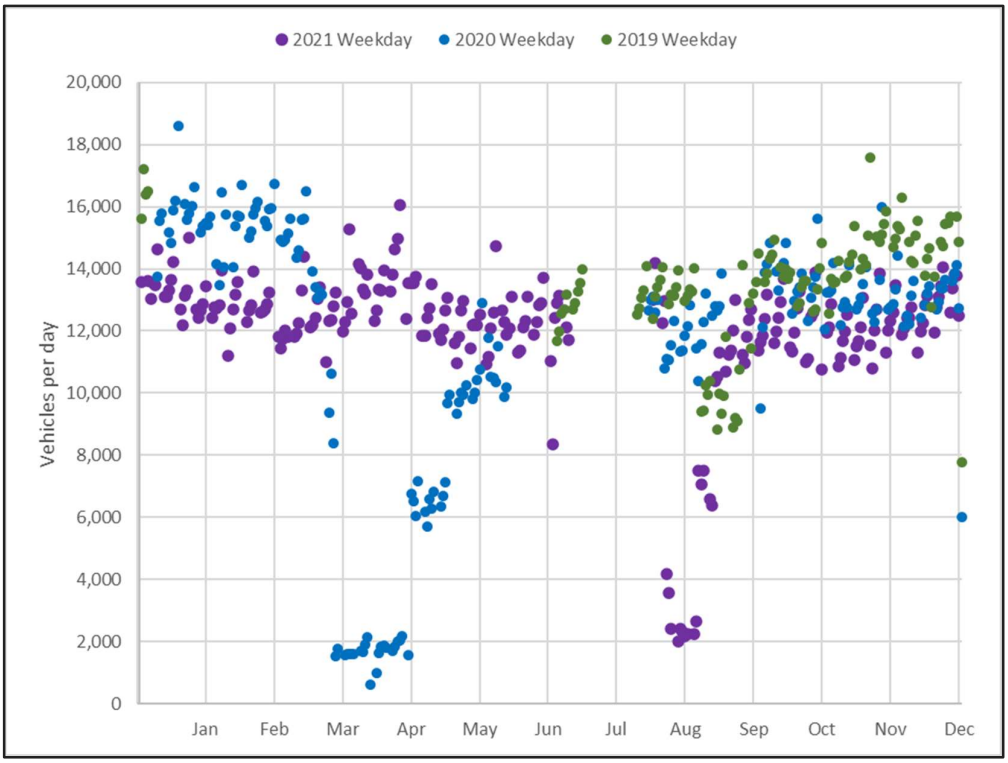


Figure 3-2: Daily Traffic Volumes on SH6 West of Arrowtown-Lake Hayes Road, 2019-21

Table 3-1 provides a summary of recent traffic volume and speed information on Centennial Avenue and McDonnell Road provided by QLDC. Traffic volumes on Centennial Avenue are two to three times greater than on McDonnell Road. This is because Centennial Avenue forms the primary link to the residential areas in Arrowtown. McDonnell Road is used by residents with direct access to the road and residents of Millbrook to access SH6. The reported speeds are generally aligned with the sign-posted speed limits in the area.

Table 3-1: Traffic Volumes and Speeds (Source: QLDC)

Location	Date	7-day average	Mean Speed (km/h)	85th % Speed (km/h)
Centennial Ave (1,010m)	Jun 2021	2,450	47	55
Centennial Ave (1,600m)	Mar 2021	3,380	71	79
McDonnell Road (125m)	Mar 2022	1,200	40	47
McDonnell Road (4,300m)	Nov 2021	4,200	66	74

3.2 Road Safety

The Waka Kotahi NZTA 'Crash Analysis System' (CAS) database has been used to review the safety record of roads within the vicinity of the Site. The review has been based on the roads shown in Figure 3-3 which also shows the locations of crashes reported in the five-year period 2017-2021.

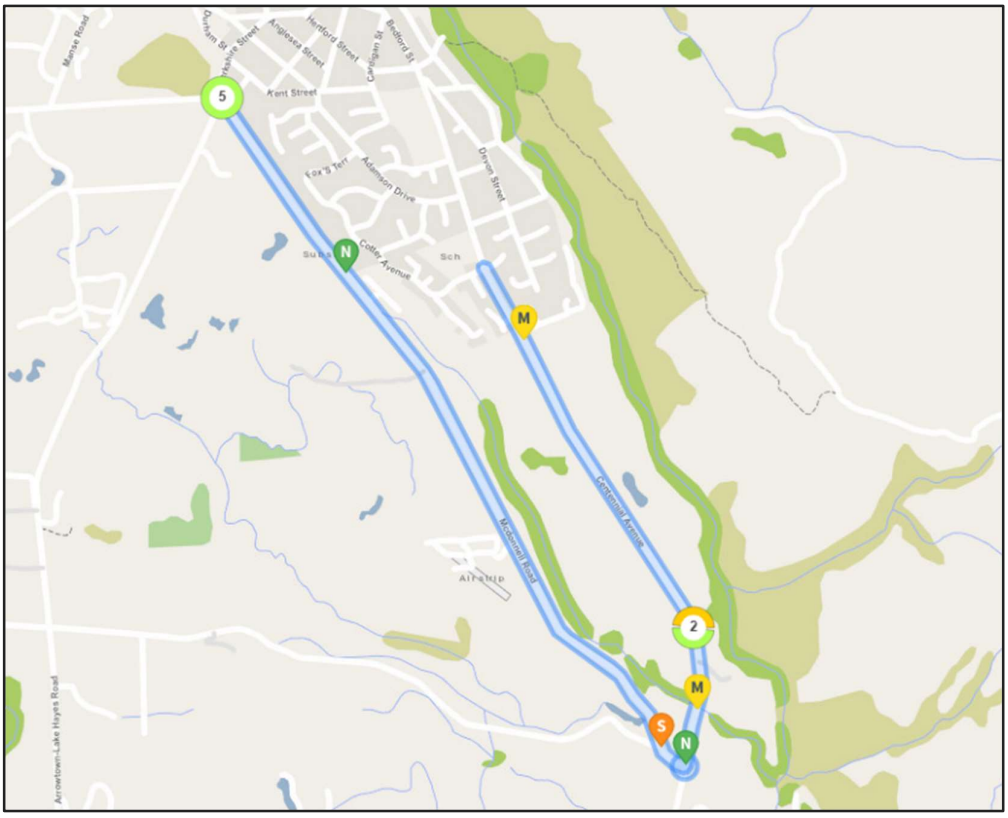


Figure 3-3: Crash Search Area for Period 2017-2021 (Waka Kotahi CAS)

A total of 12 crashes have been reported within the search area with one crash causing serious injury. Three crashes resulted in minor injuries with other eight having no reported injuries.

The serious injury crash was reported at the McDonnell Road / Hogans Gully Road intersection and involved a cyclist falling over their handlebars because of hard braking to avoid a collision with a vehicle suspected of not giving way.

The three minor-injury crashes were reported on Centennial Avenue. The minor injury crash to the north of the Centennial Avenue search area involved an intoxicated e-bike rider turning right in front of a vehicle approaching from behind. The other two minor injury crashes involved excessive speed leading to crossing the centreline and distraction, which resulted in loss of control due to collision with a roadside barrier.

The two non-injury crashes on Centennial Avenue involved inattention leading to loss of control and a centreline rear-end crash.

Of the five crashes reported at the northern intersection of McDonnell Road, three were the result of give-way errors which led to right-turning crashes. The remaining two were due to inattention leading to a rear-end and loss of control crash.

4 Brackens Ridge Development

4.1 Site Overview

Figure 4-1 shows the site location within the Arrowtown South Special Zone. The Special Zone is bordered to the north by the low density suburban residential zone and to the east by the community purpose golf course zone. Land to the south is zoned as Wakatipu Basin Rural Amenity Zone (WBRAZ) and includes the Arrowtown Golf Course. The Arrowtown urban growth boundary was recently extended through the District Plan Review process to include 3.6 ha of land south of Jopp Street which previously formed the urban growth boundary. Approval for subdivision of this land has been granted to establish 69 residential lots. The land to the west comprises The Hills Special Zone, WBRAZ and Wakatipu Basin Lifestyle Zoned land.

The Arrowtown Lifestyle Village is located on the western side of McDonnell Road about 250 m south of the site.

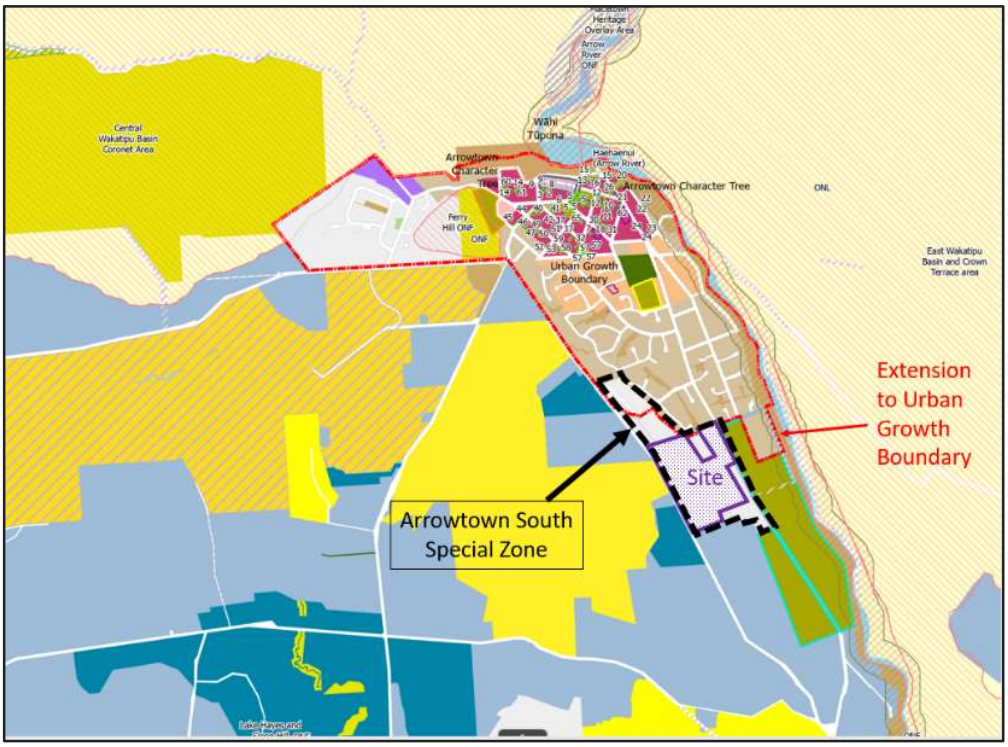


Figure 4-1: Site Location and Surrounding Zones

4.2 Road Network

Figure 4-2 shows a concept design for the residential development of the site. The indicative layout has been based on roads being constructed in accordance with the QLDC Land Development and Subdivision Code of Practice (COP).

The eastern part of the site which is above the main escarpment has frontage to Centennial Avenue. Property access is proposed via a network of new public roads and two new intersections on

Centennial Avenue. There are no property access locations on the eastern side of Centennial Avenue and south of Jopp Street that would be affected by the new intersections. The proposed road layout has been designed to allow adjoining portions of land not under the control of Mt Soho Trust to be integrated in the future.

Centennial Avenue has a generally straight and level alignment along the site frontage and there are no physical constraints to achieving required sight distances at the proposed intersection locations for the existing rural speed limit at the intersections. The proposed separation of the intersections is appropriate for an urban environment but will require that the existing urban speed limit boundary is relocated to the south.

Figure 4-2: Concept Design for Proposed Residential Subdivision

The western portion of the site has frontage to McDonnell Road and property access will be provided by new public roads and two new intersections. The site plans include provision for a separate access to a function centre ("Wedding Venue") 40-50 m south of the new northern intersection. This separation will comply with the District Plan requirements for separation of an access from an intersection if the urban speed limit boundary is relocated to encompass the site.

Since McDonnell Road has a straight and level alignment along the site frontage, there are no physical constraints to achieving required sight distances for the existing 80 km/h speed limit. However, it would be desirable for the urban speed limit zone to be extended to the south of the site boundaries.

The proposed road network includes a link that will connect the upper and lower portions of the site and follows the natural topography to minimise gradients so that these comply with the COP standards for new roads to the greatest extent practical.

The proposed widths of the road reserves comply with the COP requirements and will provide sufficient space for footpaths to be constructed beside the roads where they are required. The footpaths will provide connections to the wider pedestrian network on Centennial Avenue and McDonnell Road.

4.3 Public Transport

Although the site is not located close to the existing public transport network, the internal road network has been designed so that it could accommodate an extension to the bus route as shown below. An extension of this form would contribute to increased use of the service by residents in the development as well as the surrounding southern Arrowtown area.

Figure 4-3: Potential Extension to Public Transport Service Route

5 Development Traffic Patterns

5.1 Expected Traffic Generation

The Waka Kotahi NZTA Research Report 453 'Trips and Parking Related to Land Use' (RR453) includes traffic generation rates for residential activity. The 85th percentile traffic generation rate for outer suburban residential activity is reported to be 8.2 vpd per household which is aligned with the design rate specified in the COP of 8 vpd per household.

The subdivision concept plan indicates around 100 residential lots with a range of lot sizes. Since some of the larger lots provide sufficient space for a second dwelling, this has assessment has been based on 150 dwellings in total to reflect secondary dwellings on 50% of all lots.

With 150 dwellings constructed within the site, the subdivision could generate about 1,200 vpd on average. In practice, the total traffic generation is likely to be lower than this because some dwellings are likely to be used for visitor accommodation. Based on the 2018 Census information which recorded more than 25% vacant properties in Arrowtown, the average daily traffic generation could be less than 900 vpd.

The peak hour traffic generation of residential activity typically coincides with work travel demands. The peak hour rate is typically about 1 vph per dwelling and based on that rate, the subdivision could generate 150 vph during the commuter peak periods based on 50% of lots having secondary dwellings. Again, if some of the dwellings were used as visitor accommodation, they would be less likely to contribute to commuter peak hour traffic volumes and actual levels could be closer to 120 vph.

5.2 Expected Movement Patterns

The ITE Trip Generation Manual provides information on typical movement patterns for residential activity. During the morning peak period, about 80 percent of all vehicle movements will be outbound. During the afternoon / evening peak period, the dominant movement will be inbound and typical represents about 65 percent of all movements.

The subdivision will broadly comprise two areas: one at the top of the escarpment and one at the bottom. The upper, eastern side of the site has potential for about 50 new lots to be formed with the lower, western portion of the site also having about 50 lots. On that basis, vehicle movements from the site would be expected to be evenly distributed between Centennial Avenue and McDonnell Road on a similar basis.

Journey to work and education travel information from the 2018 census has been used to provide an indication of the likely travel patterns for residents of the new subdivision and is summarised in Table 5-1. The census travel information suggests that work and education related travel patterns within Arrowtown are predominantly local in nature. This reflects the employment opportunities within the town as well as recreational and education facilities in the area.

Table 5-2 shows how the peak hour vehicle movements could affect traffic volumes on McDonnell Road and Centennial Avenue based on this distribution. Peak volumes on McDonnell Road could change by about 20 vph to the south of the site and about 40 vph to the north. Similarly, on

Centennial Avenue, peak hour volumes could change by about 20 vph to the south and about 40 vph to the north.

Table 5-1: Expected Travel Distribution

Destination	Distribution
Arrowtown	50%
Frankton	18%
Queenstown Central	10%
Queenstown North / Arthurs Point	12%
Wakatipu Basin / Other	10%

Table 5-2: Expected Changes in Peak Hour Traffic Volumes

Destination	Vehicle Movements per hour	McDonnell Rd		Centennial Ave	
		South	North	South	North
Arrowtown	60		30		30
Frankton	22	11		11	
Queenstown Central	12	6		6	
Queenstown North / Arthurs Point	14		7		7
Wakatipu Basin / Other	12	3	3	3	3
Total	**120**	**20**	**40**	**20**	**40**

6 Expected Transport Effects

6.1 Road Network Effects

6.1.1 Arrowtown Roads

The existing peak hour traffic volumes on McDonnell Road and Centennial Avenue are estimated to be 120 vph and 250-350 vph respectively based on peak hour volumes representing about 10 percent of the average daily volume. Full development of the site for residential activity could increase the peak hour volumes on McDonnell Road to about 140 vph which remains well within the capacity of the road. Peak hour volumes on Centennial Avenue could increase by about 40 vph north of the site to 300-350 vph. This remains within the capacity of the road and would not be expected to contribute to any noticeable effects on the operation of the network.

Since McDonnell Road and Centennial Avenue are classified as Arterial Roads, there is an expectation that these roads will carry higher volumes of traffic than local roads as part of their function to connect centres.

The urban speed limit boundary on McDonnell Road and Centennial Avenue is located south of the existing Urban Growth Boundary. If increased residential development at the site is approved, it would be appropriate for the urban speed limit boundary to moved to the south so that it encompassed the new intersections to the site.

6.1.2 SH6 / McDonnell Road Intersection

McDonnell Road meets SH6 at a Give-way sign controlled intersection that includes a left turn lane and right turn bay on SH6. Full development of the site could increase the volume of peak hour movements at the intersection by 40 vph. This level of change would not be expected to generate any noticeable changes in the average delays at the intersection.

6.1.3 Arrowtown Road - Lake Hayes Road / McDonnell Road Intersection

Increased residential development of the site will increase movements at the Arrowtown – Lakes Hayes Road / McDonnell Road intersection. While sight-distances at the intersection are good, the skewed configuration with Malaghans Road to the north has resulted in five crashes being reported in the last five years. Although none of the crashes resulted in any injuries being reported, it does suggest that drivers are misjudging the intentions of other drivers. Although the increase in movements at the intersection does have potential to increase the crash rate, the low speeds at the intersection will reduce the likelihood of any crashes to cause serious injury or a fatality.

6.1.4 Shotover Bridge

The Queenstown Transport Model indicates that the westbound traffic volumes on the Shotover Bridge would reach about 1,500 vph during the morning peak by 2028 and that the eastbound volumes will reach a similar level in the evening peak. It is understood that this level of demand will be approaching the capacity of the bridge. There will be some uncertainty with the timing because the modelling was completed prior to the COVID19 pandemic which has affected travel demands in the region.

Based on a peak hour traffic generation 120 vph, the site could contribute to an additional 35-45 movements on the Shotover Bridge during the commuter peak periods as residents travel to or from Frankton and Central Queenstown. This increase would represent just one part of increased travel demands on the bridge resulting from increased residential development within the wider Wakatipu Basin area. The main effect of this development is that it could bring forward the time at which the bridge capacity could be reached. In practice, any growth in the travel demand at Shotover Bridge is likely to be lower than this because travel to central Queenstown will often be quicker via Malaghans Road.

QLDC has been actively promoting Travel Demand Measures to reduce the vehicle demands on the bridge including improvements to the public transport network and expansions to the cycle network. Together, these factors would be expected to result in the average peak hour traffic generation rate per dwelling reducing to less than 1 vph. Since the site has frontage to cycle paths on Centennial Avenue and McDonnell Road and could be linked to the bus network, it is considered that the actual peak hour traffic generation will be less than 1 vph per dwelling on average.

Other factors that could also reduce the average peak hour traffic generation rates include:

1) The proportion of lots with secondary dwellings is likely to be less than 50% adopted for this assessment.

2) The potential use of some lots as visitor accommodation which would not be permanently occupied and would be less likely to generate vehicle movements during the commuter peaks[1];

3) The increased adoption of home working following the changes in work travel patterns because of the COVID19 pandemic.

4) The proximity of the development site close to an existing settlement that contains a school, community services, recreational facilities in addition to recreation, commercial and industrial employment opportunities. Figure 6-1 shows some of the local amenities and facilities that would be within 500 m, 1 km and 1.5 km of the site. The historic centre of Arrowtown is located less than 2 km from the site.

[1] The 2018 Census reported 25% of dwellings were unoccupied.

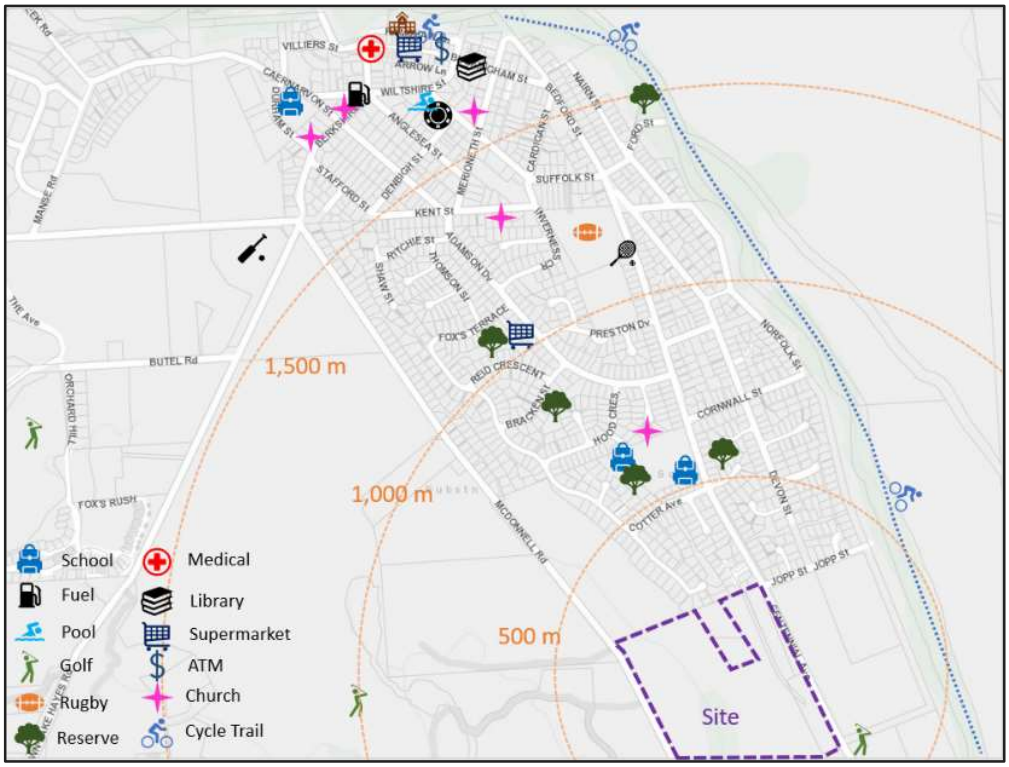


Figure 6-1: Arrowtown Amenities / Facilities

Figure 6-2 shows walking isochrone information from the site frontage to Centennial Avenue. It indicates that the historic centre of Arrowtown is 20-25 minutes walk from the site which is comparable to the Tewa Development on Jopp Street. This would take 5-10 minutes to travel by cycle. Travel from the lower, western portion of the site could add several minutes to the walking times.

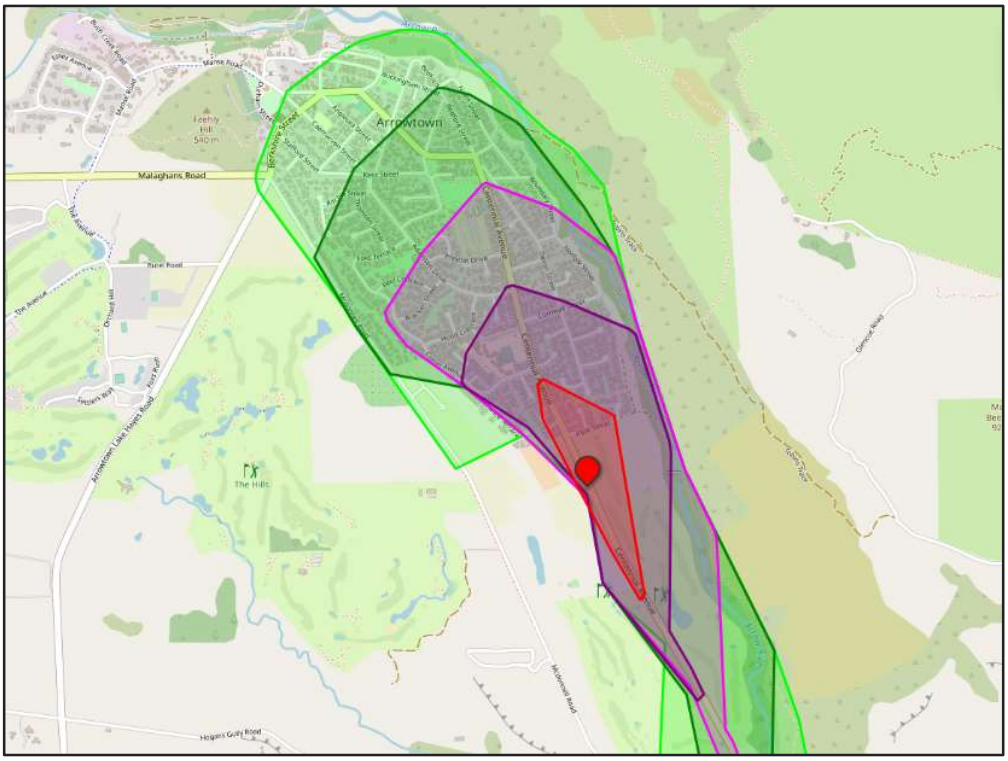


Figure 6-2: Walking Isochrones (5 minute intervals)

6.2 Road Safety

Th existing speed limits on McDonnell Road and Centennial Avenue along the site frontages is 80 km/h. The proposed residential development will result in the roads having a more urban character and it would be appropriate for the urban speed limit zone to be extended to include the site. It may also be necessary to extend the speed calming measures on McDonnell Road.

7 Conclusions

The proposed increase in residential development on Mt Soho Trust land within the Arrowtown South special zone will result in higher volumes of vehicle movement on both McDonnell Road and Centennial Avenue. However, even with the increased volumes, the volumes remain well within the capacity of the roads and nearby intersections. There are no reasons why the road network could not continue to operate safely and efficiently.

Access to the public transport services within Arrowtown would currently involve a walk of 1-1.5 km to reach a bus stop. This could be reduced by extending the bus service route to the site and making provision for a bus stop within the site. This represents a natural extension to the route that will better serve residents in south Arrowtown. Although changes to the bus route is a matter for Orbus and the Regional Council to address, the road layout within the eastern portion of the site can be designed to accommodate an extension to the bus route and would be consistent with Council strategy to promote greater use of public transport.

All of Arrowtown is within 2 km and since the site has direct links to the wider pedestrian and cycle network, this means that these travel modes are a practical option for local travel. Access to the wider network will be possible via the new intersections on McDonnell Road and Centennial Avenue.

The capacity of the Shotover Bridge represents one constraint on peak hour travel in the Wakatipu Basin area. Transport modelling completed prior to the COVID19 pandemic suggested that travel demands at the bridge would be approaching its capacity by 2028. The proposed residential development will represent just one of many contributing sources to traffic growth at the bridge. The amount of growth that could be directly attributed to the development will be influenced by the level to access to public transport and any other travel demand measures implemented by Council, Waka Kotahi and Otago Regional Council.

The proximity of the site adjacent to an existing township that contains a wide range of community facilities, amenities and employment opportunities will also influence the need to travel beyond Arrowtown and makes travel by modes other than private vehicle a practical option.

Overall, the proposed residential development can be supported from a transport perspective because the site is well connected to the existing transport networks, is adjacent to existing residential development and improved access to public transport can be provided.

APPENDICES

Appendix A Site Plans

North

Jopp St

Centennial Ave

Advance Tce

Open Space Terrace Face

Commercial Space

Natural Wetland

Constructed Wetland

Wedding Venue

Open Space

Muter Homestead

Open Space

McDonnell Rd

AMENITY NOTES:

- Continuous hedging on street edge to promote Arrowtown Green Streets' within development and on Centennial Avenue
- Roof and wall claddings specified by Design Control
- Consistency of tree planting within lots specified by Design Control
- No individual lot accesses from Centennial Avenue
- Swale edges, no kerb and channel (the 'Arrowtown look' preferred)

baxter design

0 10 20 50m
SCALE = 1:1000 AT A1

REFERENCE : **4383-SK01** - SCALE = 1: 2000 AT A3 - **17 JUNE 2022**
DRAFT - NOT A WORKING DRAWING - NOT FOR CONSTRUCTION

DRAFT

PROPSED LOT LAYOUT
MONK - ARROWTOWN