

Winton Land Limited

Proposed Screen Hub Ayrburn

Transportation Assessment



CARRIAGEWAY
CONSULTING

traffic engineering | transport planning



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1. Introduction

- 1.1. Waterfall Park Developments Limited is seeking consents through Schedule 2 of the Fast-Track Approvals Act 2024 for the construction and operation of a 'screen hub' on a site within Ayrburn. The proposal includes two sound stages, a rear lot for filming and also laydown of materials and storage. Accommodation is also included in the proposal. When a production is using the studios, this will be used for production offices and for accommodating the cast and crew. When the studios are not in use, this will revert to standard visitor accommodation.
- 1.2. This Transportation Assessment sets out a detailed analysis of the transportation issues associated with the proposal including changes in travel patterns that are likely to arise from development of the site. Where potential adverse effects are identified, ways in which these can be addressed are set out.
- 1.3. This report is cognisant of the guidance specified in the New Zealand Transport Agency's '*Integrated Transport Assessment Guidelines*' and although travel by private motor vehicle is addressed within this report, in accordance with best practice the importance of other transport modes is also recognised. Consequently, travel by walking, cycling and public transport is also considered.



2. Site Overview

2.1. Location

2.1.1. The site is located approximately 2.3km southwest of Arrowtown and 8km northeast of Queenstown Airport, immediately adjacent to the Ayrburn hospitality area. The site has frontage only onto the private road that serves Ayrburn, known as Ayr Avenue. It is zoned as Wakatipu Basin Rural Amenity Zone in the proposed Queenstown Lakes District Plan ('District Plan').

2.1.2. The location of the site in the context of the local area is shown in Figure 1 and in more detail in Figure 2.

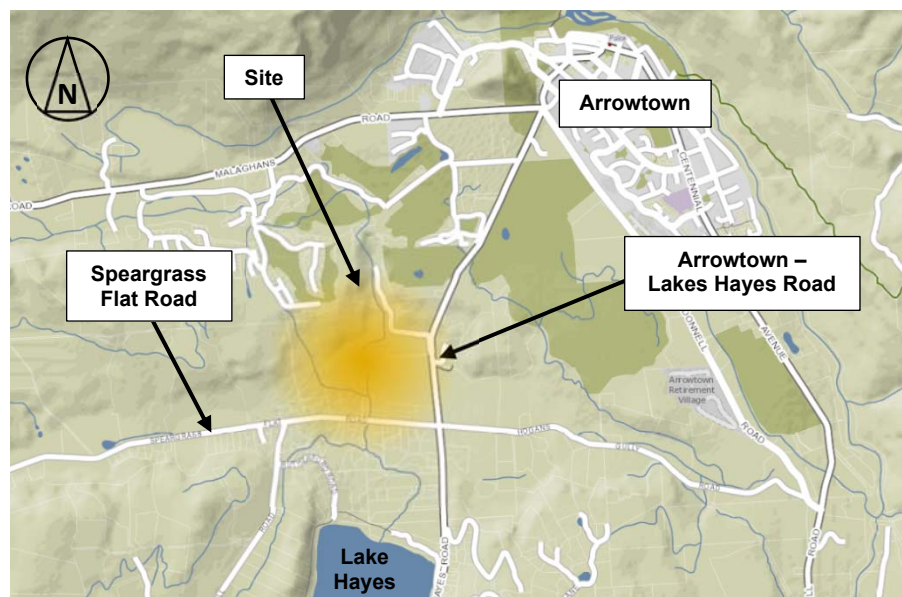


Figure 1: General Location of Development Site

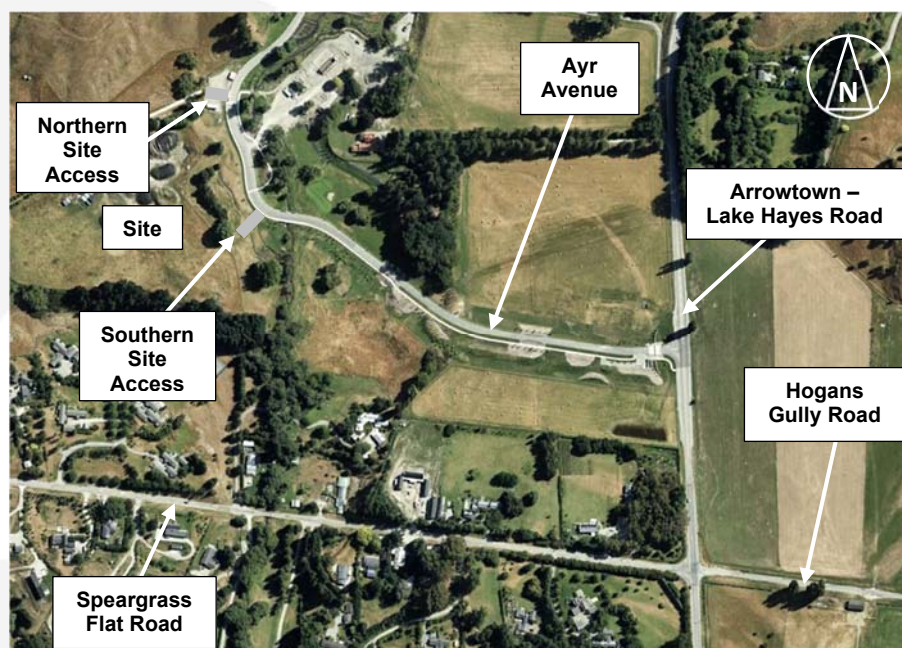


Figure 2: Aerial Photograph of Development Site and Environs



2.2. *Roading Classification*

- 2.2.1. The proposal has frontage onto, and will be accessed from, Ayr Avenue. This road serves the Waterfall Park Zone and was consented under RM171280. The road is not vested, but in effect operates as a Local Road with a role of providing for property access.
- 2.2.2. In turn, Ayr Avenue connects to Arrowtown – Lakes Hayes Road, which is an Arterial Road under the roading hierarchy indicating a role in primarily providing for through traffic and a limited property access function.
- 2.2.3. Further south, Speargrass Flat Road and Hogans Gully Road are Collector Roads under the roading hierarchy indicating a role carrying both through traffic and providing local access.



3. Current Transportation Networks

3.1. *Roading Network*

- 3.1.1. The site is presently served by two existing accesses onto Ayr Avenue, as shown on Figure 2 above. The southern site access is constructed as a vehicle crossing with no traffic signs or markings, and it currently provides two traffic lanes (but for clarity, the existing formation is temporary and will be upgraded as part of the proposal).



Photograph 1: Southern Site Access

- 3.1.2. Sightlines in both directions at the southern vehicle crossing along Ayr Avenue are excellent and appropriate for the operating speed of the road. For clarity, although there is a bridge parapet towards the east, an appropriate sight distance is provided.



Photographs 2 and 3: Sightlines to the Left and Right from the Southern Site Access

- 3.1.3. The northern site access is located 130m to the north of the southern site access. The current formation of the northern vehicle crossing is also temporary, and will be improved as part of the proposed development. It is presently constructed as a vehicle crossing with no traffic signs or markings, with the access itself being gated.



Photograph 4: Northern Site Access

- 3.1.4. Sightlines in both directions at the northern vehicle crossing are excellent and appropriate for the operating speed of Ayr Avenue.



Photographs 5 and 6: Sightlines to the Left and Right from the Northern Site Access

- 3.1.5. Ayr Avenue itself has a gently curving alignment, and one traffic lane in each direction with a total carriageway width of 7.2m. However, two sections of single-lane working have been introduced in order to provide a traffic calming effect, thereby supporting the posted speed limit of 30km/h. Due to the topography and also for flood protection, at some locations the road is slightly elevated above the ground level on each side and in other locations there is a fill slope on one side.



Photograph 7: Eastern End of Ayr Avenue Looking West



Photograph 8: One-Lane Section of Ayr Avenue

- 3.1.6. Ayr Avenue terminates at a priority intersection with Arrowtown – Lakes Hayes Road, approximately 550m east of the site. The Arrowtown – Lakes Hayes Road / Ayr Avenue intersection has recently been constructed and therefore meets current guidelines and sight distances for turning traffic are excellent. The intersection has auxiliary turning lanes for vehicles entering Ayr Avenue from both the north and the south.



Photograph 9: Ayr Avenue / Arrowtown – Lake Hayes Road Intersection Looking South

- 3.1.7. At the location of the intersection, Arrowtown – Lakes Hayes Road has a rural road formation with a 7.2m carriageway with one traffic lane in each direction, and gravelled shoulders on each side. On the western side of the road is a 6m grassed verge with a swale, and there is a drainage ditch on the eastern side. The speed limit of the road is 70km/h.



Photograph 10: Arrowtown – Lake Hayes Road Looking North

- 3.1.8. The alignment of Arrowtown – Lakes Hayes Road over much of the frontage of Ayrburn is flat and straight, but towards the north the road starts to rise and it turns slightly towards the northeast (as can be seen on Photograph 10).
- 3.1.9. Approximately 250m south of the Arrowtown – Lake Hayes Road / Ayr Avenue intersection, Speargrass Flat Road and Hogans Gully Road join Arrowtown – Lake Hayes Road at a priority ('give-way') controlled crossroads where traffic on Arrowtown – Lake Hayes Road retains priority. No auxiliary turning lanes are formed at the intersection although there is shoulder

widening on Arrows town – Lake Hayes Road that enables vehicles turning left to slow and move clear of through traffic. Each of these roads lies within a 20m legal width.



Photograph 11: Arrows town – Lakes Hayes Road / Speargrass Flat Road Intersection Looking South

3.2. Non-Car Infrastructure

- 3.2.1. Over much of its length, Ayr Avenue has a 2.0m shared walking/cycling route provided on one side only (the southern side) which runs the full length of the road from the site to Arrows town – Lake Hayes Road. The southern vehicle crossing crosses this shared route but it terminates just south of the northern vehicle crossing.



Photograph 12: Shared Walking and Cycling Route on Southern Side of Ayr Avenue

- 3.2.2. There is also a footpath over part of the northern side of Ayr Avenue but this is limited to a section between (but on the other side of the road to) the northern and southern site accesses.



- 3.2.3. The low speed limit on the road of 30km/h also supports cyclists to share the road with motorised traffic.
- 3.2.4. There is currently no specific infrastructure provided for pedestrians or cyclists on Arrowtown – Lake Hayes Road adjacent to the site. However, there are wide grassed berms which could be used for walking trips.
- 3.2.5. Although there are no public transport services that operate along Ayr Avenue, there is a bus stop located on the northbound traffic lane, just south of the northern site access. This is provided within an indented bus layby, and serves the private Ayrburn shuttle bus which provides a link from Queenstown.



Photograph 13: Bus Layby in Ayr Avenue

3.3. Future Changes

- 3.3.1. There are no known changes to the roading infrastructure in the area. However there are consented developments within Ayrburn that have not yet been constructed, meaning that the receiving environment for the current proposal will differ in respect of the traffic flows on the network. These are described and discussed below.

4. Current Transportation Patterns

4.1. Traffic Flows

4.1.1. The MobileRoad website records traffic count data throughout the country. This shows the following daily traffic volumes in 2023¹:

- Arrowtown – Lake Hayes Road: 4,700 vehicles per day (two-way);
- Speargrass Flat Road: 1,000 vehicles per day (two-way); and
- Hogans Gully Road: 440 vehicles per day (two-way).

4.1.2. As part of RM180584 (for a hotel complex served by Ayr Avenue, presently unconstructed), traffic surveys were carried out in October 2017 at the Arrowtown – Lake Hayes Road / Speargrass Flat Road / Hogans Gully Road intersection. Data is also available for the traffic flows on these three roads in 2017, meaning that the traffic growth between 2017 and 2023 can be found:

- Arrowtown – Lake Hayes Road:
 - 4,700 vehicles per day (two-way) in 2023;
 - 4,000 vehicles per day (two-way) in 2017;
 - Growth of 17.5%
- Speargrass Flat Road:
 - 1,000 vehicles per day (two-way) in 2023;
 - 750 vehicles per day (two-way) in 2017;
 - Growth of 33.3%
- Hogans Gully Road:
 - 440 vehicles per day (two-way) in 2023;
 - 150 vehicles per day (two-way) in 2017;
 - Growth of 293.3%

4.1.3. The observed 2017 traffic volumes at the Arrowtown – Lake Hayes Road / Speargrass Flat Road intersection are shown below.

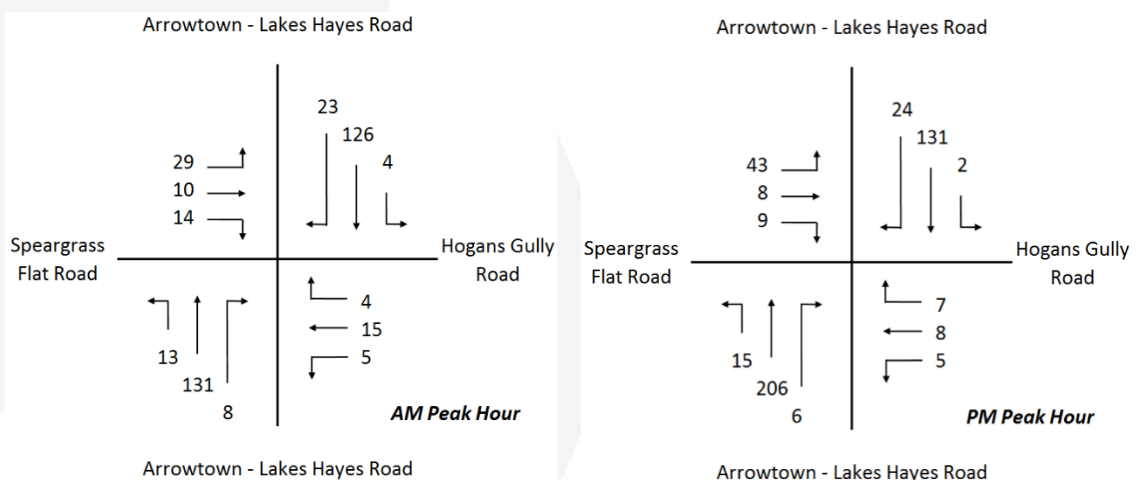


Figure 3: 2017 Weekday Surveyed Peak Hour Traffic Flows, Arrowtown – Lake Hayes Road / Speargrass Flat Road Intersection

¹ These are set out in the MobileRoad database as estimated traffic volume

4.1.4. The percentage growth figures set out above have been used to factor the observed 2017 traffic volumes at the Arrowtown – Lake Hayes Road / Speargrass Flat Road intersection. Because the growth has been different on each road, a Furness procedure has been used with the volumes factored to a convergence of at least 2%.

Road and Direction		Morning Peak Hour				Evening Peak Hour			
		2017 observed	Factor	2017 factored	Furness	2017 observed	Factor	2017 factored	Furness
Arrowtown – Lakes Hayes Road (south)	N	152	17.5%	179	178	227	17.5%	267	263
	S	145		170	170	145		170	170
Hogans Gully Road (east)	E	22	293.3%	87	86	16	293.3%	63	63
	W	24		94	93	20		79	77
Arrowtown – Lakes Hayes Road (north)	N	164	17.5%	193	193	256	17.5%	301	301
	S	153		180	176	157		184	179
Speargrass Flat Road (west)	E	53	33.3%	71	70	60	33.3%	80	79
	W	51		68	68	47		63	63

Table 1: Comparison of 2017 Volumes Factored to 2023 and Furnessed

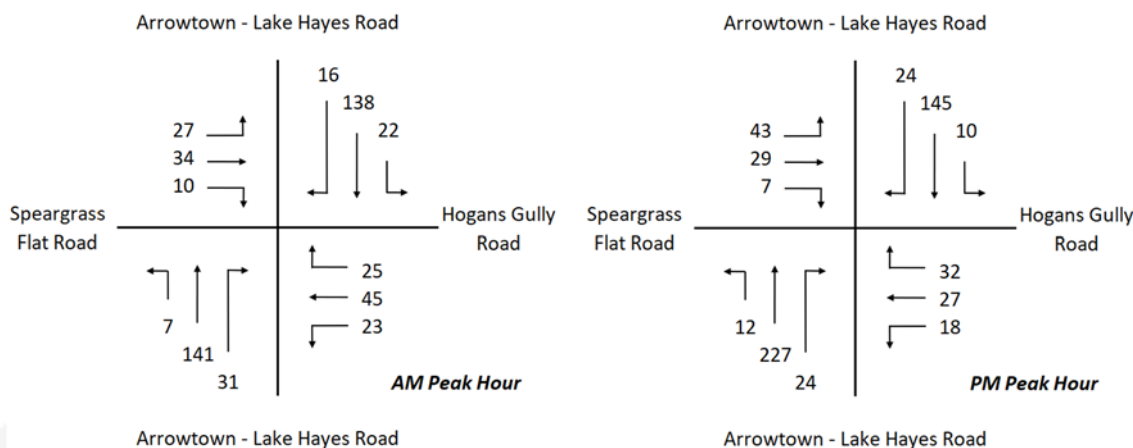


Figure 4: Factored Weekday Peak Hour Traffic Flows, Arrowtown – Lake Hayes Road / Speargrass Flat Road Intersection (2023 Base)

4.1.5. There have been a series of developments within Ayrburn which can also be expected to have affected traffic flows at this intersection. These are:

- RM210591 (Change of Use of Cart Shed and Dairy)
- RM211193 (Ayrburn Domain Extension)
- RM220829 (Barrel Room)
- RM230163 (Frost Ponds)
- RM230352 (Commercial Services Building)
- RM240244 (Orangerie)
- RM230229 (Vary Hotel Consent for Maintenance Shed)
- RM221133 (Waterfall Park Display Suite)
- RM220874 (Variation to Ayrburn Domain Extension (RM211193) & Bakehouse)

4.1.6. It is understood that the consents set out above have already been implemented, in which case the traffic flows will be included in the factored 2023 volumes, or the activities will not

generate traffic in their own right (such as the frost ponds). Irrespective, in and of themselves, none of the activities consented have a substantial trip generation.

4.1.7. There are five resource consents which have not been implemented. The details for two of these are noted below:

- RM200791 (Lot 3 Residential Building Platform): This consent is for a single dwelling; and
- RM230425 (Haybarn): This consent is for a function venue with 432sqm Public Floor Area and able to accommodate up to 180 guests.

4.1.8. Importantly both of these consents are located on exactly the same site. This means that if one of progresses, the other cannot. Of the two, the Haybarn has the greatest traffic generation, which was assessed within the application as generating a peak hour traffic volume of 62 vehicle movements. As the consent is in place, it is appropriate to take this into account when considering the receiving environment for the proposed development.

4.1.9. There are a further two consents which could have a substantial traffic generation if implemented:

- RM180584 (Hotel). This consent allows for the construction and operation of a 380-room hotel, dining facilities and bars, and a conference facility for up to 685 people; and
- RM220926 (Northbrook Arrowtown) and RM220252 (Northbrook Arrowtown Variation). This consent allows for the construction and operation of a large retirement village.

4.1.10. Again, these two consents are located on exactly the same site and so if one progresses, the other cannot. It is understood that at the current time, the retirement village is being progressed rather than the hotel, with a retirement unit display suite in place and pre-sales progressing². As such, it appears very unlikely that the consented hotel will ultimately progress.

4.1.11. Nevertheless, as the hotel consent remains in place and has the higher traffic generation, this consent has been taken into account for the purposes of assessing the receiving environment for the proposed development.

4.1.12. Finally, RM240314 / RM240462 / RM240457 are presently being processed, but will allow for concerts to be held at Ayrburn. However the temporary events do not relate to activities that occur frequently and will all operate under temporary traffic management arrangements. Given this, they have not been considered further within this analysis.

4.1.13. The traffic generation of the hotel (RM180584) as presented in the resource consent application, is set out below.

² The Applicant, Winton, is listed on the NZ and Australian stock exchanges and the development of the retirement village has also been included in formal communications under relevant statements.

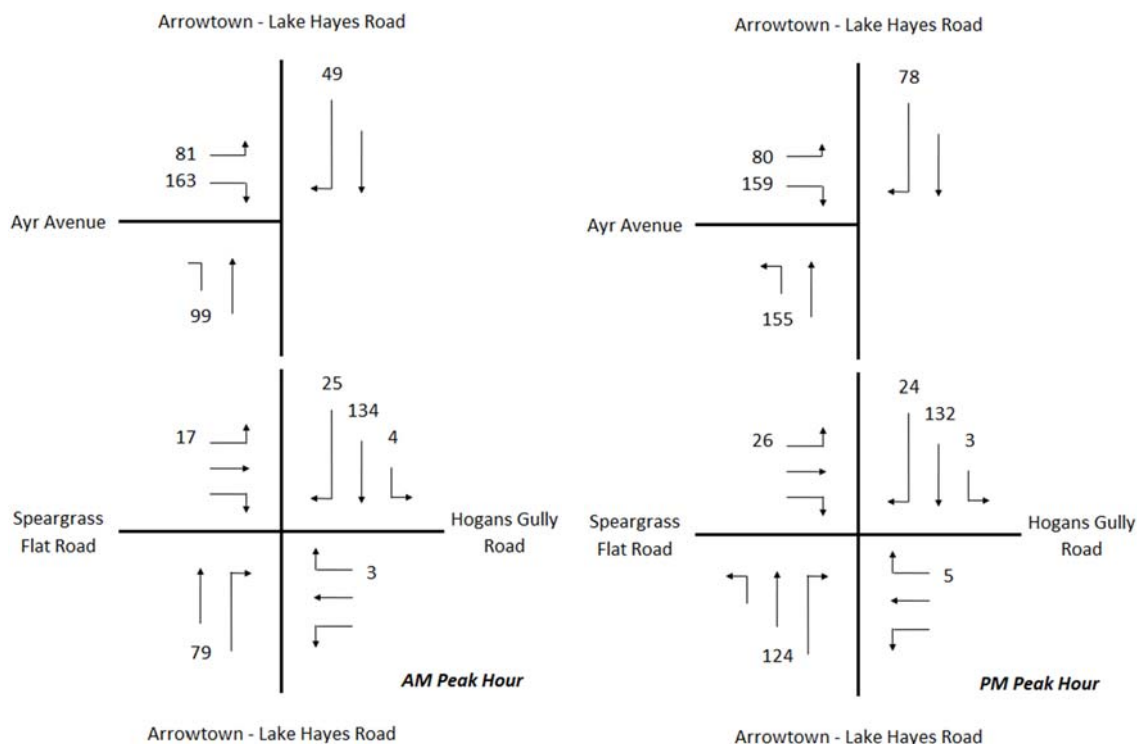


Figure 5: Peak Hour Traffic Generation of Consented Hotel

4.1.14. An allowance has also been made for a further 62 vehicle movements associated with The Haybarn, with these vehicles been apportioned in accordance with the traffic generation of the hotel. The Haybarn traffic, plus the addition of Figures 4 and 5 therefore leads to the following traffic flows for the receiving environment for the current application.

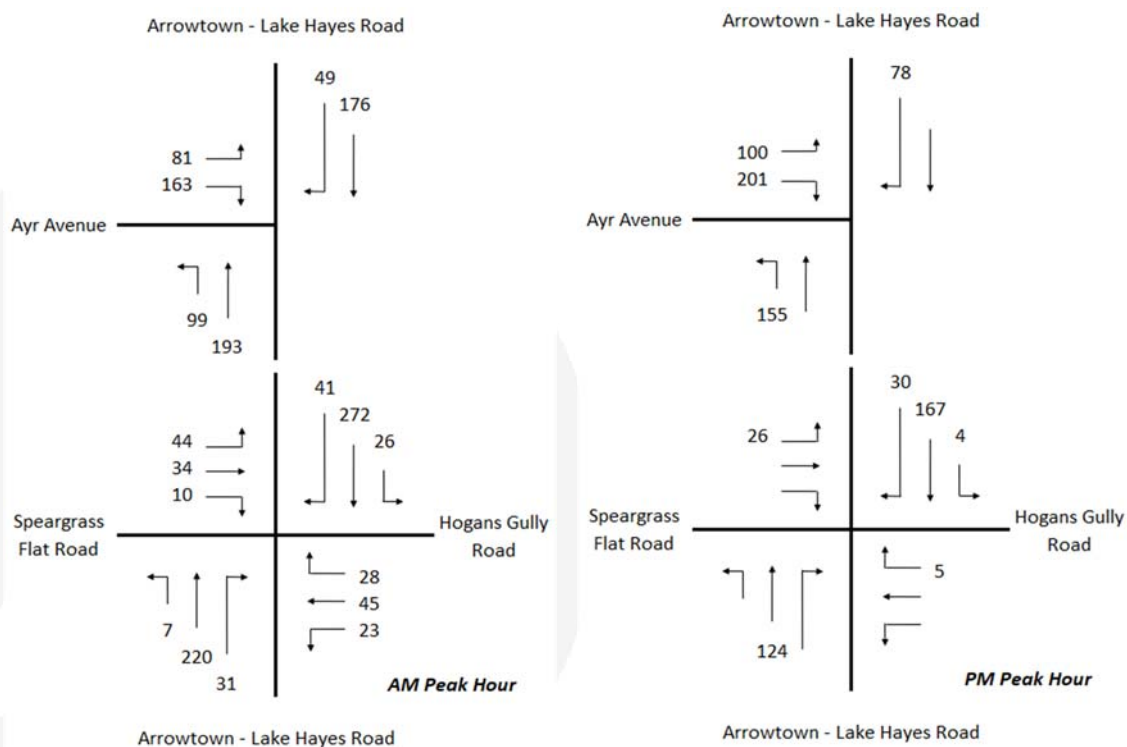


Figure 6: Factored Weekday Peak Hour Traffic Flows, Arrowtown – Lake Hayes Road / Speargrass Flat Road Intersection Plus Consented Hotel and Haybarn Development

4.1.15. The Arrowtown – Lakes Hayes Road / Ayr Avenue and Arrowtown – Lakes Hayes Road / Speargrass Flat Road intersections have been modelled using the computer software package Sidra Intersection for the traffic flows set out above and the results are summarised below.

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Arrowtown – Lakes Hayes Road (south)	L	7.0	0.0	A	7.0	0.0	A
Arrowtown – Lakes Hayes Road (north)	R	7.9	0.2	A	8.7	0.3	A
Site Access	L	5.7	0.3	A	6.5	0.5	A
	R	8.2	1.0	A	11.7	1.9	B

Table 2: Performance of the Arrowtown – Lake Hayes Road / Ayr Avenue Intersection (With Hotel and Haybarn but No Screen Hub Development)

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Arrowtown – Lakes Hayes Road (south)	L	8.2	0.3	A	8.3	0.3	A
	R	8.0	0.3	A	8.4	0.3	A
Hogans Gully Road (east)	L	8.8	0.6	A	9.1	0.7	A
	T	10.7	0.6	B	13.2	0.7	B
	R	12.4	0.6	B	15.3	0.7	C
Arrowtown – Lakes Hayes Road (north)	L	7.8	0.4	A	8.7	0.6	A
	R	7.9	0.4	A	8.8	0.6	A
Speargrass Flat Road (west)	L	8.3	0.2	A	9.4	0.4	A
	T	10.5	0.3	B	12.8	0.3	B
	R	11.7	0.3	B	13.9	0.3	B

Table 3: Performance of the Arrowtown – Lake Hayes Road / Speargrass Flat Road Intersection (With Hotel and Haybarn but No Screen Hub Development)

4.1.16. It can be seen that both intersections provide a good level of service, with low queues and delays on all turning movements.

4.2. Non-Car Modes of Travel

4.2.1. Given that the surrounding area is presently largely rural, it can reasonably be expected that pedestrians and cyclists will be infrequent road users. Although no formal surveys have been carried out, informal observations on Ayr Avenue and Arrowtown – Lake Hayes Road did not identify any walking or cycling movements along either side of the roads.

4.2.2. It can be expected that as Ayrburn develops, the existing infrastructure along Ayr Avenue will be increasingly well used. However it is unlikely that there will be significant increases in pedestrian and cyclists using Arrowtown – Lake Hayes Road.



- 4.2.3. Overall, it is considered that the current levels of infrastructure provided for both pedestrians and cyclists are appropriate for likely current and future demands.
- 4.2.4. Bus service 2 (Arthurs Point – Arrowtown) passes the site on Arrowtown – Lake Hayes Road, although there are currently no stops adjacent to the site. It operates with a one-hour frequency in each direction.

4.3. Road Safety

- 4.3.1. The NZTA Crash Analysis System has been used to establish the location and nature of the recorded traffic crashes in the vicinity of the site. All reported crashes between 2019 to 2023, plus the partial record for 2024, were identified on the full length of Ayr Avenue, at the Arrowtown – Lake Hayes Road / Ayr Avenue intersection and for a distance of 300m along Arrowtown – Lake Hayes Road (a distance which therefore includes the Arrowtown – Lake Hayes Road / Speargrass Flat Road intersection).
- 4.3.2. This showed that there has been only one reported crash over this timeframe. This occurred at the Arrowtown – Lake Hayes Road / Speargrass Flat Road intersection, when a driver travelling westbound on Hogans Gully Road failed to give-way and struck a vehicle on Arrowtown – Lake Hayes Road. The crash did not result in any injuries.
- 5.3.3 Based on the reported crashes, it is not considered that there is any evidence of any safety-related deficiencies on this part of the roading network.





5. Proposal

- 5.1. The proposed development is for a 'screen hub', which will have several components.
- 5.2. With regard to the studio, two sound stages are proposed of 2,000sqm GFA and 1,139sqm GFA, making a total of 3,139sqm GFA. There is also a 'back lot' area for exterior productions and for storage and laydown of materials. No studio tours for tourism purposes will be offered.
- 5.3. On-site accommodation is also proposed for cast and crew, with a total of 185 units being proposed (but as some of these may be double-keyed, for assessment purposes 231 separate units have been considered). Some 52 of these will have kitchens, with the remaining 179 only having tea and coffee facilities.
- 5.4. However the accommodation will serve several purposes. When a production is underway, some of the rooms may be converted to act as offices for the production. Under this scenario, the configuration will be:
 - 72 units become offices;
 - 30 accommodation units remain with kitchens;
 - 129 accommodation rooms remain with no cooking facilities
- 5.5. When screen production activities do not require the use of the accommodation units, the units will be able to be used for visitor accommodation (with 52 units having kitchens and 179 not having cooking facilities, as noted earlier).
- 5.6. The accommodation facility has an associated function venue / conference facility with a maximum capacity for 200 people. This facility will remain available for use even if a production is using the studios.
- 5.7. There is also a wellness centre proposed, and this will remain available for use by the public even if a production is using the studios. This will offer a range of treatments including:
 - 6 rooms for beauty treatments;
 - 1 room used by a hairdresser;
 - A yoga room;
 - A gym; and
 - A pool and steam room.

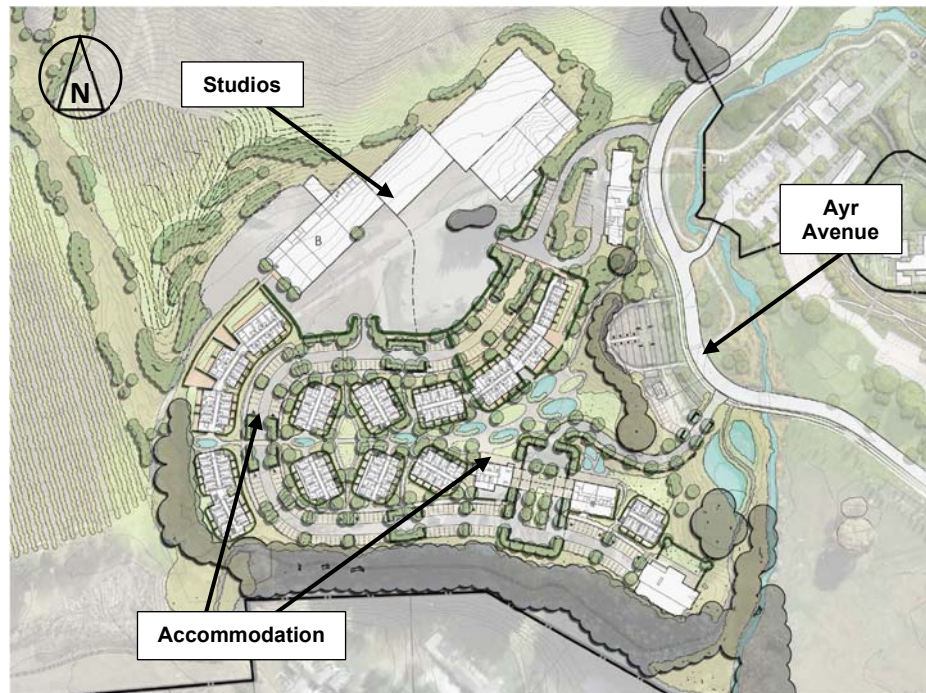


Figure 7: Proposed Site Layout (Extract from Winton Drawing, Annotated)

- 5.8. In respect of access to the site, two vehicle crossings are proposed. These are located on the southern side of Ayr Avenue, in the locations of the two existing accesses described previously and shown on Photographs 1 and 4. Both of the vehicle crossings and associated accessways will however be upgraded to reflect that they will be used by a greater number of vehicles including heavy vehicles.
- 5.9. The accesses connect to a parking aisle which runs through the site. In total, 226 parking spaces are to be provided.

6. Traffic Generation and Distribution

6.1. Traffic Generation

6.1.1. As noted above, the studios will be operating (in which case the accommodation will be used by those working at the site), or the accommodation will be available for use as visitor accommodation. In either of these cases, the wellness centre and the function room will remain available to the public.

6.1.2. The traffic generation of a studio was considered in detail when a recent application for studios in Wanaka was consented. This drew on a literature review of overseas jurisdictions to identify traffic generation rates, as shown below (expressed in vehicle movements per 100sqm GFA):

- Shepperton Studios (London), average day:
 - 7am to 8am: 0.447 vehicles arriving / 0.041 vehicles departing;
 - 5pm to 6pm: 0.065 vehicles arriving / 0.258 vehicles departing;
 - 6pm to 7pm: 0.059 vehicles arriving / 0.334 vehicles departing.
- Shepperton Studios (London), 90th percentile day:
 - 7am to 8am: 0.618 vehicles arriving / 0.056 vehicles departing;
 - 5pm to 6pm: 0.088 vehicles arriving / 0.357 vehicles departing;
 - 6pm to 7pm: 0.082 vehicles arriving / 0.462 vehicles departing.
- Warner Bros Leavesden:
 - Morning peak hour: 0.178 vehicles arriving / 0.056 vehicles departing;
 - Evening peak hour: 0.054 vehicles arriving / 0.520 vehicles departing.
- TriBro Studios, Ottawa:
 - Morning peak hour: 0.86 vehicles arriving / 0.13 vehicles departing;
 - Evening peak hour: 0.13 vehicles arriving / 0.73 vehicles departing.
- Cape Town Film Studios:
 - Morning peak hour: 0.34 vehicles arriving / 0.06 vehicles departing;
 - Evening peak hour: 0.06 vehicles arriving / 0.34 vehicles departing.
- Founders Studio, Georgia:
 - Morning peak hour: 0.37 vehicles arriving / 0.10 vehicles departing;
 - Evening peak hour: 0.1 vehicles arriving / 0.29 vehicles departing.
- Pinewood East, London:
 - Morning peak hour: 0.789 vehicles arriving / 0.05 vehicles departing;
 - Evening peak hour: 0.038 vehicles arriving / 0.612 vehicles departing.

6.1.3. For the proposed studio of 3,139sqm GFA, this gives rise to traffic generation of:

- Morning peak hour:
 - 6 to 27 vehicles arriving; and
 - 1 to 4 vehicles departing
- Evening peak hour:
 - 1 to 4 vehicles arriving; and
 - 8 to 23 vehicles departing

6.1.4. It can be seen that the range of traffic volumes is large, but the volumes themselves are relatively small. Given that the purpose of the integrated site development is to enable people to live and work in the same area, it can be expected that the extent of travel to and from external locations will be limited – in essence, those working at the studio will also live in the on-site accommodation and will therefore many will walk to work, with most travel to external destinations occurring outside the morning and evening peak hours. This manner of operation

also means that accommodation is unlikely to generate traffic itself, since no person will be required to check-in or check-out or will be visiting attractions in the area.

- 6.1.5. Conversely, when the studios are not in use, the accommodation will be able to be used for visitors. The hotel (RM180584) was consented using a rate of 0.68 vehicle movements per room/unit and for consistency, the same rate has been adopted for the current application. This indicates a peak hour volume of 157 vehicles (two-way) for the proposed 231 rooms/units.
- 6.1.6. It can immediately be seen that the use of the site for visitor accommodation represents the scenario with the greatest traffic generation. Consequently this is the scenario that has been taken forwards for further assessment.
- 6.1.7. The consented hotel included a wellness centre and for consistency, the same trip generation rates have been used for the current analysis. The wellness centre at the consented hotel was anticipated to be able to accommodate up to 50 people, and the proposed facility is of the same size. Accordingly, the same traffic generation has been adopted, with 42 vehicle movements (two-way) expected at the busiest times.
- 6.1.8. With regard to the function room, the Haybarn within Ayrburn was consented (under RM230425) for a maximum capacity of 180 people, and an associated traffic generation of 62 vehicle movements (two-way) in the peak hours.
- 6.1.9. This traffic generation was calculated on the basis that all patrons would arrive and depart the site within one hour of a function starting and ending, that is, no patrons were assumed to stay on-site. With visitor accommodation also being proposed in this instance, it is plausible (in fact likely) that a proportion of patrons would stay within the site rather than needing to depart. However, for a robust assessment, no allowance has been made for this.
- 6.1.10. Factoring for the difference in capacity (180 persons at the Haybarn and 200 persons proposed at this development), the function venue could be expected to generate up to 69 vehicle movements (two-way) in the peak hours.
- 6.1.11. In summary then, the peak hour traffic generation would be:
- Scenario: Studio in operation
 - Studio: 31 vehicle movements (two-way)
 - Accommodation: 0
 - Spa: 42 vehicle movements (two-way)
 - Function venue: 69 vehicle movements (two-way)
 - Scenario: Studio not in operation
 - Studio: 0
 - Accommodation: 157 vehicle movements (two-way)
 - Spa: 42 vehicle movements (two-way)
 - Function venue: 69 vehicle movements (two-way)
- 6.1.12. It is unlikely that the traffic generation of all of these activities would coincide. For example, a function might start at 9am and attendees will therefore arrive before that time, but many guests only depart their visitor accommodation after 9am. Similarly, an evening function will commence after many guests at the visitor accommodation have already arrived and checked-in. However in order to demonstrate a robust assessment, the analysis has been carried out assuming that all activities generate their peak traffic flows at the same time.
- 6.1.13. It can be seen that the greatest traffic generation scenario occurs when the accommodation is being used as visitor accommodation, and this has therefore been taken forwards for analysis.

6.2. Trip Distribution

6.2.1. With regard to the distribution of these vehicles, because the traffic generation of the visitor accommodation is much greater than for the studio, the same distribution has been adopted as for the consented hotel. This was consented on the basis of two thirds of traffic being associated with Arrowtown – Lakes Hayes Road (south) with the remaining one third travelling via Arrowtown – Lakes Hayes Road (north).

6.2.2. The anticipated traffic generation of the proposal is shown below³.

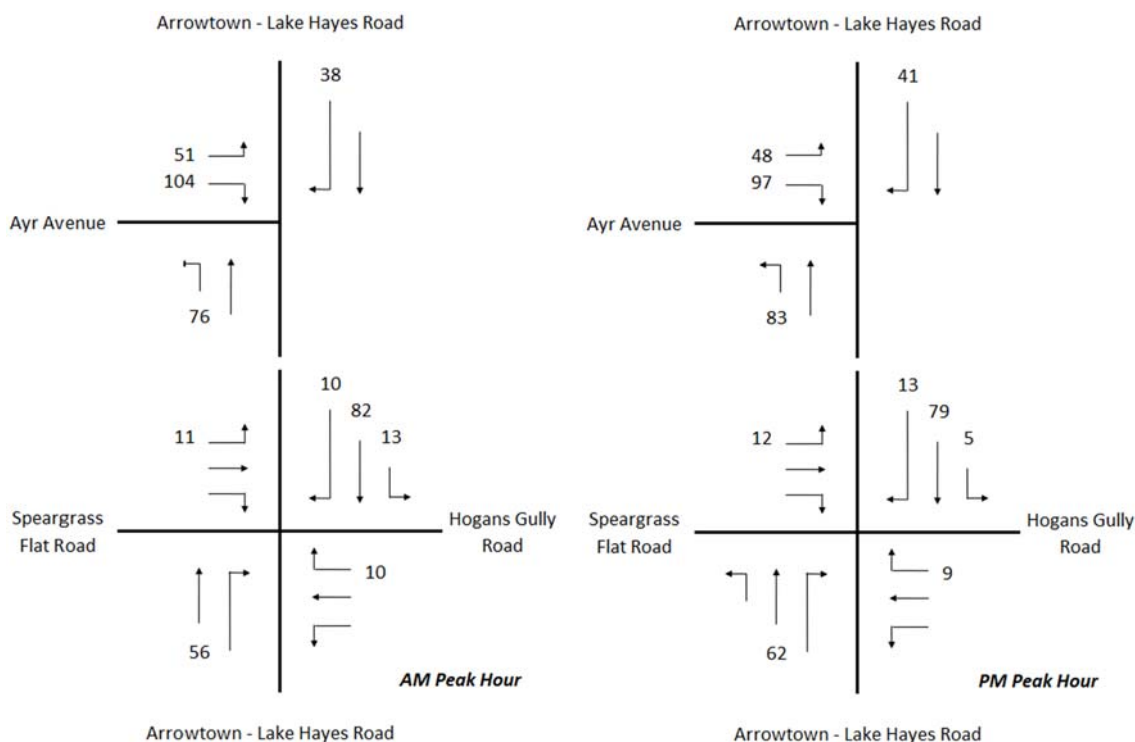


Figure 8: Traffic Generation of Proposed Development (Allowing for Visitor Accommodation within the Site)

³ Note that fractions of vehicles have been rounded up or down, and so the numbers below differ very slightly from those in paragraph 6.1.11 above

7. Effects on the Transportation Networks

7.1. Intersection Capacity

7.1.1. The Arrowtown – Lakes Hayes Road / Ayr Avenue and Arrowtown – Lakes Hayes Road / Speargrass Flat Road intersections have been remodelled using the computer software package Sidra Intersection using the traffic flows from the receiving environment shown on Figure 6 and the expected traffic flows from the development shown on Figure 8. The results are summarised below.

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Arrowtown – Lakes Hayes Road (south)	L	7.0	0.0	A	7.0	0.0	A
Arrowtown – Lakes Hayes Road (north)	R	8.2	0.3	A	9.2	0.5	A
Site Access	L	5.7	0.6	A	6.6	0.7	A
	R	10.8	2.6	B	17.0	4.4	C

Table 4: Performance of the Arrowtown – Lake Hayes Road / Ayr Avenue Intersection (With Hotel and Haybarn plus Screen Hub Development)

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Arrowtown – Lakes Hayes Road (south)	L	8.9	0.4	A	8.9	0.3	A
	R	8.7	0.4	A	9.1	0.3	A
Hogans Gully Road (east)	L	9.9	0.9	A	11.0	1.1	B
	T	13.6	0.9	B	17.8	1.1	C
	R	15.6	0.9	C	20.4	1.1	C
Arrowtown – Lakes Hayes Road (north)	L	8.0	0.6	A	9.3	0.9	A
	R	8.4	0.6	A	9.5	0.9	A
Speargrass Flat Road (west)	L	8.7	0.3	A	10.1	0.5	B
	T	13.0	0.4	B	16.1	0.4	C
	R	13.9	0.4	B	16.9	0.4	C

Table 5: Performance of the Arrowtown – Lake Hayes Road / Speargrass Flat Road Intersection (With Hotel and Haybarn plus Screen Hub Development)

7.1.2. A comparison of the changes arising from the proposed development is shown below.

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Arrowtown – Lake Hayes Road (south)	L	-	-	-	-	-	-
Arrowtown – Lake Hayes Road (north)	R	+0.3	+0.1	-	+0.5	+0.2	-
Site Access	L	-	+0.3	-	+0.1	+0.2	-
	R	+2.6	+1.6	A to B	+5.3	+2.5	B to C

Table 6: Comparison of the Performance of the Arrowtown – Lake Hayes Road / Ayr Avenue Intersection (With / Without Screen Hub Development)

Road and Movement		Morning Peak Hour			Evening Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service	Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Arrowtown – Lakes Hayes Road (south)	L	+0.7	+0.1	-	+0.6	-	-
	R	+0.7	+0.1	-	+0.7	-	-
Hogans Gully Road (east)	L	+1.1	+0.3	-	+1.9	+0.4	A to B
	T	+2.9	+0.3	-	+4.6	+0.4	B to C
	R	+3.2	+0.3	B to C	+5.1	+0.4	-
Arrowtown – Lakes Hayes Road (north)	L	+0.2	+0.2	-	+0.6	+0.3	-
	R	+0.5	+0.2	-	+0.7	+0.3	-
Speargrass Flat Road (west)	L	+0.4	+0.1	-	+0.7	+0.1	A to B
	T	+2.5	+0.1	-	+3.3	+0.1	B to C
	R	+2.2	+0.1	-	+3.0	+0.1	B to C

Table 7: Comparison of the Performance of the Arrowtown – Lake Hayes Road / Speargrass Flat Road Intersection (With / Without Screen Hub Development)

7.1.3. It can be seen that both intersections continue to provide a good level of service, with low queues and delays on all turning movements. As would be expected for priority intersections, the greatest changes arise for the right-turn movements from minor approaches to the intersection. However the highest increase in delay on any approach is just 5 seconds, and at worst, Level of Service C is provided. The remains in the zone of stable flow.

7.1.4. As noted previously, it is considered that these analyses represent a robust assessment because they allow for:

- The consented hotel to be in place, when it presently appears that the retirement village will be progressed (which has a lower traffic generation);
- A large function being held at the site, when such functions will not occur frequently; and
- All activities within both the consented hotel and the proposed development generating peak traffic flows at the same time.

7.1.5. Notwithstanding this, a sensitivity test has been carried out to ascertain the extent to which there is available capacity remaining at the intersections. For this assessment, the traffic flows passing through the intersections have been increased until any movement at either location

changed to Level of Service D (which, while being somewhat arbitrary, is a typical 'rule of thumb' indicating a rural intersection is starting to operate with higher levels of congestion).

- 7.1.6. This analysis shows that the Arrowtown – Lakes Hayes Road / Speargrass Flat Road intersection is able to accommodate traffic flows that are 24% higher on all approaches before Level of Service D arises. At the Arrowtown – Lakes Hayes Road / Ayr Avenue intersection, the extent of traffic increase is somewhat less, but an 8% increase could occur before Level of Service D arises. Taking into account that the volumes used in the analysis are calculated on a highly robust basis, it is considered that this shows both intersections have ample capacity remaining.
- 7.1.7. Given that the two external intersections have ample capacity, it can be reliably concluded that the two proposed site accesses, which carry far less traffic, will also operate with very good levels of service.

7.2. Non-Car Modes of Travel

- 7.2.1. The development is unlikely to lead to any significant increase in walking and cycling in the area due to the distances to potential destinations, but if there is an increase, it is considered that the existing infrastructure is easily able to accommodate these.
- 7.2.2. The increase in traffic does not create any large changes in delays on the roading network, meaning that public transport use is unlikely to be affected by the proposal. However it may be possible for those using the activities at the development to travel by public transport if stops were to be introduced adjacent to the access roadway. This is a commercial decision for the operator rather than the applicant.
- 7.2.3. As noted previously, there is an indented bus layby immediately adjacent to the site, on the southern side of Ayr Avenue. This could be used for public transport (or private coaches) if desired.

7.3. Road Safety

- 7.3.1. Based on a review of the road safety records, the proposal is unlikely to result in adverse road safety effects arising as a result of the increase in traffic flows on the road network. The Arrowtown – Lakes Hayes Road / Ayr Avenue intersection is newly constructed and a safety audit was carried out of the layout prior to construction. While the Arrowtown – Lakes Hayes Road / Speargrass Flat Road intersection has been in place for some considerable time, the prevailing crash rate shows that it is presently operating safely and there are no reasons why this should not continue with the additional traffic loadings generated by the proposal.
- 7.3.2. The Arrowtown – Lakes Hayes Road / Ayr Avenue intersection is constructed with auxiliary turning lanes. No auxiliary lanes are in place at the Arrowtown – Lakes Hayes Road / Speargrass Flat Road intersection and so an assessment has been undertaken using the warrants set out in the Austroads Guide to Traffic Management Part 6 ('Intersections, Interchanges and Crossings').



7.3.3. Taking into account the traffic flows set out previously (which to reiterate, are based on a worst-case assessment), at the current time the warrants indicate the following, assuming that the consented hotel was to proceed:

- Receiving environment of current traffic flows plus the consented hotel and The Haybarn:
 - an auxiliary right-turn lane **is** warranted for traffic turning from the north to the west;
 - an auxiliary right-turn lane **is not** warranted for traffic turning from the south to the east.
- Receiving environment (as above) plus the additional traffic generated by the proposed development:
 - an auxiliary right-turn lane **is** warranted for traffic turning from the north to the west;
 - an auxiliary right-turn lane **is** warranted for traffic turning from the south to the east.

7.3.4. Taking into account the traffic flows set out previously, at the current time the warrants indicate the following, assuming that the retirement village was to proceed:

- Receiving environment of current traffic flows plus the retirement village and The Haybarn:
 - an auxiliary right-turn lane **is not** warranted for traffic turning from the north to the west;
 - an auxiliary right-turn lane **is not** warranted for traffic turning from the south to the east.
- Receiving environment (as above) plus the additional traffic generated by the proposed development:
 - an auxiliary right-turn lane **is** warranted for traffic turning from the north to the west;
 - an auxiliary right-turn lane **is** warranted for traffic turning from the south to the east.

7.3.5. At the present time, no auxiliary turning lanes are in place but the 20m legal width of the roads and the existing wide shoulder mean that right-turn lanes can easily be introduced.

8. Car Parking Provision

8.1. Proposed Number of Parking Spaces

8.1.1. The drawings provided show that 226 car parking spaces are proposed.

8.2. Anticipated Demand for Parking Spaces

8.2.1. There are two scenarios which may arise with regard to the site operation, being times when the studio is operating and those working at the studio are living on the site, and times when the studio is not operating and the accommodation is being used as visitor accommodation. The operation of the wellness centre and the function venue will create additional car parking demand for each of these two scenarios.

When Studio is in Operation

8.2.2. As noted above, the total floor area of sound stages is 3,139sqm GFA. Based on other studies of proposed studios, the following parking rates are seen:

- Shepperton Studios (London), average day:
 - 1.26 parking spaces per 100sqm GFA of studio and offices;
- Warner Bros Leavesden:
 - 2.50 parking spaces per 100sqm GFA of studio and offices;
- TriBro Studios, Ottawa:
 - 2.89 parking spaces per 100sqm GFA of studio and offices;
- Cape Town Studios:
 - 60 spaces per sound stage; plus
 - 1 space per 50sqm GFA for offices
- Founders Studio, Georgia:
 - 0.89 parking spaces per 100sqm GFA of studio and offices;
- Pinewood East, London:
 - 2.20 parking spaces per 100sqm GFA of studio and offices;

8.2.3. Of note is that several of these studies set out that the studio itself should be considered as 'warehousing' with the offices being considered as standard offices.

8.2.4. In this case, the studios are a total of 3,139sqm GFA with Units B1 and B2 indicated for offices being a total of 2,111.5sqm and 2,368.1sqm GFA respectively. Thus the studios *plus the offices* total 7,619sqm GFA. This then indicates the following parking is required:

- Shepperton Studios (London):
 - 96 parking spaces;
- Warner Bros Leavesden:
 - 190 parking spaces;
- TriBro Studios, Ottawa:
 - 220 parking spaces;
- Cape Town Studios:
 - 210 spaces;
- Founders Studio, Georgia:
 - 68 parking spaces;
- Pinewood East, London:
 - 168 parking spaces.



8.2.5. Although the National Policy Statement on Urban Development resulted in the removal of parking ratios from the District Plan, immediately prior to this, the parking provisions had been through a review as the District Plan was updated. Accordingly, it can reasonably be concluded that the resultant parking ratios were deemed appropriate by the Council. Applying these in this case for warehousing and offices activities:

- Studio:
 - 3,139sqm GFA proposed
 - Parking ratio was 1 space per 100sqm
 - Therefore 31 spaces required
- Offices:
 - 4,480sqm GFA proposed
 - Parking ratio was 2 spaces per 100sqm
 - Therefore 90 spaces required
- Total: 121 spaces

8.2.6. There are also published parking rates for warehousing and parking set out in the NZTA Research Report 453 ('Trips and Parking Relating to Land Use). In view of the limited alternative travel modes due to the location of Ayrburn, it is considered appropriate to apply the 85th percentile rates in this instance:

- Studio:
 - 3,139sqm GFA proposed
 - Parking ratio was 1.7 spaces per 100sqm
 - Therefore 53 spaces required
- Offices:
 - 4,480sqm GFA proposed
 - Parking ratio was 3.2 spaces per 100sqm
 - Therefore 143 spaces required
- Total: 196 spaces

8.2.7. The median value of the observed parking at other studios is 179 spaces, which is within 10% of the calculated value using observed ratios from NZTA RR453. However on a more detailed review, the reports for both Shepperton Studios and Founders Studio indicate a high degree of travel choice to available in the area, and therefore these two results are likely to result in a lower parking demand than would arise at Ayrburn. If these two results are discounted on the basis of greater travel choice, then the average value of the values remaining is 197 spaces, which is almost exactly the same as the parking calculated from published rates and considering the studio as warehousing and offices.

8.2.8. At this time, the visitor accommodation units are anticipated to be utilised by people associated with the production. As such, it is not considered that additional car parking demand will arise but rather, this will be encompassed in the figures above. In other words, staff may own and need to park a car, but the parking demand associated with this is included within the parking demand for the studio as those people walk between the accommodation, the studio and the studio offices.

When Studio is not in Operation

8.2.9. As noted above, due to the ability to double-key some units, for this calculation an allowance has been made for 52 units to have kitchens and for 179 rooms to not having cooking facilities.

8.2.10. The previous parking provisions of the District Plan would require the following provision to be made:

- Rooms with kitchens:
 - 52 proposed:
 - 33.5 car parking spaces for guests
 - 5.2 car parking spaces for staff
- Rooms without kitchens:
 - 179 proposed:
 - 43.8 car parking spaces for guests
 - 9.0 car parking spaces for staff
- Total:
 - 77 car parking spaces for guests
 - 14 car parking spaces for staff

8.2.11. NZTA RR453 contains data from three hotels⁴, but one of these has large conference facilities which may distort the results. When the other two sites are considered, the range is extremely large of 0.55 to 1.36 parking spaces per room. This latter value appears implausibly high as it suggests that on average, each room is associated with more than one car. There is more data available for motels⁵, with 35 observations and an 85th percentile value of 0.57 parking spaces per unit. Adopting these values indicates that 128 to 273 parking spaces would be required in this instance (but with this upper limit likely to be too high).

8.2.12. The ITA Guide to Traffic Generating Developments sets out that each motel-type room should have one parking space whereas 1 parking space is appropriate to serve 4 hotel-type rooms. This then indicates that 97 spaces are required. This aligns well with the previous parking ratios of the District Plan which show 91 spaces are required. However for the purposes of this assessment, to ensure a robust assessment the value of 128 spaces calculated above has been used.

Function Venue

8.2.13. The function venue is able to host a total of 200 people. By way of comparison, The Haybarn was consented for 180 people and required up to 57 parking spaces depending on the size of event and whether any guests travelled by coach. A simple pro-rata indicates that for 200 people, 63 car parking spaces are required, assuming that these people were not staying at the visitor accommodation (as would be the case when the studios were in use).

Wellness Centre

8.2.14. As noted above, the wellness centre would have a capacity for 50 people, and is the same size as that proposed for the consented hotel. This was consented on the basis of 1 parking space per 10 persons, indicating that 5 spaces would be required. However this was on the basis that a proportion of patrons were staying within the associated visitor accommodation, which would not be the case when the studios were in use.

8.2.15. Taking a first principles approach, the wellness centre has 7 rooms for clients, plus a gym and yoga room. It is reasonable that each room could be in use at the same time, but the room will

⁴ It is assumed that as hotel rooms, no cooking facilities are provided within the room

⁵ As motel rooms, these are assumed to have cooking facilities in each unit

take some time to clean afterwards. This suggests that one patron will depart before the next arrives. Thus there could be demand for 14 spaces, allowing for one member of staff per room.

8.2.16. The location of Ayrburn will tend to limit the extent to which patrons from off-site will travel to yoga, the gym and the proposed pool, and patrons might also choose to combine these visits with visits to the hospitality activities immediately adjacent. A notional allowance has been made for 10 parking spaces for these.

8.3. Assessment of Parking Supply and Demand

8.3.1. When the studio is in operation:

- 226 spaces are provided on the site;
- The studio generates demand for up to 197 spaces;
- The wellness centre generates demand for up to 24 spaces;
- The function venue generates demand for up to 63 spaces
- Total demand for up to 284 spaces, 58 spaces more than is provided.

8.3.2. As noted above, there will not be a function on every day and when the function venue is not operating, the parking demand will be for 221 spaces, which can be met by the proposed number of parking spaces.

8.3.3. The rear lot of the studios is sufficiently large that it is able to easily accommodate this additional demand. It is therefore recommended that when a function is booked, studio staff temporarily relocate their vehicles into the rear lot to create parking spaces for function attendees.

8.3.4. When the studio is not in operation:

- 226 spaces are provided on the site;
- The visitor accommodation generates demand for 128 spaces;
- The wellness centre generates demand for up to 24 spaces;
- The function venue generates demand for up to 63 spaces
- Total demand for up to 215 spaces, 11 spaces fewer than is provided.

8.3.5. It can be seen that under this scenario, the site meets the expected parking demand.



9. District Plan Matters

9.1. Introduction

- 9.1.1 The District Plan sets out a number of transportation-related Rules with which any development is expected to comply. An assessment of the proposed development against these has been undertaken and the results are summarised below.

9.2. District Plan Chapter 29: Activities

9.1.1 Rule 29.4.11: High Traffic Generating Activities

- 9.1.1.1 As set out above, the proposal will generate more than 50 vehicle movements in the weekday peak hours, which therefore means the development is classified as a High Traffic Generator. This Transportation Assessment has been prepared to respond to this Rule.

Matter a. an Integrated Transport Assessment has been provided with the application and is sufficiently detailed to provide a full understanding of the projected trip generation by all modes of transport, the accessibility of a proposal by all modes of transport, the transport effects of the proposal, and the proposed methods of avoiding or mitigating the transport effects.

- 9.1.1.2 The traffic generation of the proposal is set out above. The roading network in the vicinity of the site has been assessed and the vehicles generated by the proposal can be accommodated without adverse effects on efficiency.
- 9.1.1.3 There is no evidence of any road safety related issues on the roading network, and therefore no reason to anticipate that the additional vehicles will give rise to any safety issues.
- 9.1.1.4 There is a shared walking and cycling route on Ayr Avenue adjacent to the site which can be used by pedestrians and cyclists. The modest traffic volume in Ayr Avenue means that it is not expected that there will be any difficulties for pedestrians crossing the roads.
- 9.1.1.5 It is therefore considered that the trip generation of the proposal can be accommodated on the surrounding transport networks without adverse safety or efficiency issues arising.
- 9.1.1.6 In terms of potential mitigation, it is noted that when the studio is in use, those employees will be housed within the accommodation. This considerably reduces the need for these people to travel to/from the site.

Matter b. the trip generation and transport effects of the proposed landuse or subdivision will be the same or similar in character, intensity and scale to those assessed in an approved Integrated Transport Assessment for any existing resource consent approved for the site;

- 9.1.1.7 There are no existing resource consents at the site for which an Integrated Transportation Assessment has previously been prepared.



Matter c. the proposed landuse or subdivision is in accordance with district plan provisions that were informed by a detailed Integrated Transport Assessment and will result in associated trip generation and transport effects that are the same or similar in character, intensity and scale to those identified in the previous assessment;

- 9.1.1.8 No Integrated Transportation Assessment has been prepared for the underlying land zoning where the transportation-related effects are similar in nature.

Matter d. any improvements to the transport network either within the site or in the vicinity of the site are proposed, including additions or improvements to the active and public transport network and infrastructure and the road

- 9.1.1.9 As noted above, the transport-related effects of the proposed development are not expected to give rise to adverse impacts on safety or efficiency. No significant improvements to the network are therefore proposed.

- 9.1.1.10 It is noted however that the traffic flows associated with already-consented development in the area means that an auxiliary right-turn lane is required at the Arrowtown – Lakes Hayes Road / Speargrass Flat Road intersection for the movement from north to west (although one is not in place). With the additional traffic generated by the proposed development, an auxiliary right-turn lane is also warranted for the south-to-east movement.

Matter e. the site and/ or its frontage have been designed to accommodate any planned public transport infrastructure proposed by Council;

- 9.1.1.11 There are no planned public transport infrastructure measures in the vicinity. However Ayr Avenue is constructed to allow for the movement of buses.

Matter f. public and active transport infrastructure is proposed to be provided or upgraded or, where planning for such infrastructure is not sufficiently advanced, space is provided for such infrastructure to be installed in the future

- 9.1.1.12 There are no planned public transport infrastructure measures in the vicinity.

Matter g. public transport stops are provided in locations and at spacings that provide safe and efficient access to users;

- 9.1.1.13 The site is some distance from the nearest public transport route (on Arrowtown – Lake Hayes Road) and no stops are proposed within the site itself. However there is an indented bus stop provided immediately to the site which could be used for buses.

Matter h. a Travel Plan is proposed to be provided containing travel demand management techniques;

- 9.1.1.14 No Travel Plan is proposed.

Matter i. the amount of accessory parking proposed will contribute toward travel demand management;

- 9.1.1.15 The underlying provisions for car parking are discussed below, but in short, have been designed to balance parking demand and supply.



Matter j. a Development Agreement has been agreed to, as provided for by the Local Government Act

9.1.1.16 No agreement has been entered into.

Matter k. electric vehicle charging points/ parking spaces are proposed to be provided.

9.1.1.17 No charging points are proposed as part of this application. However, the existing Ayrburn Domain car park contains provision for these to be installed in the future.

9.2 District Plan Chapter 29: Parking and Loading

9.2.1 Rule 29.5.1: Location and Availability of Parking Spaces

9.2.1.1 The layout indicates that each space will be unobstructed and can be accessed independently, and none are located within an access or other area used for other purposes. All car parking spaces are located on the development site itself.

9.2.1.2 Under this Rule, the development requires the following coach parking spaces:

- Units with kitchens:
 - 1 space per 30 units
 - 52 units proposed
 - Therefore 1.77 coach spaces required
- Units without kitchens:
 - 1 space per 50 units
 - 179 units proposed
 - Therefore 3.58 coach spaces required

9.2.1.3 In accordance with Part 29.8.41.1a, these values are added together and then rounded up or down. On this basis, 5 coach parking spaces are required.

9.2.1.4 The site itself does not provide any dedicated coach parking. However under the provisions of this Rule, coach parking spaces may overlay car parking spaces. Accordingly, the car park has been designed in such a manner that a row of car parking spaces can be cordoned off when a coach party is due to be present and the area used for parking of the coach. This is possible because coach parties do not arrive at any visitor accommodation on a speculative basis – rather, parties book well in advance and so the operator of the visitor accommodation knows when a coach is due.



Photograph 14: Example of Coach Parking within a Cordoned Off Area in a Car Park

9.2.1.5 The layout shows that five areas are available for coach parking.

9.2.2 Rule 29.5.2: Size of Required Parking Spaces and Layout

9.2.2.1 The general layout of the car parking is one long aisle with parking spaces located on either side. This is a layout that will be familiar to drivers.

9.2.2.2 Because the aisle is curved, the width of the parking spaces varies. However as a minimum, the standard spaces are all 5.0m long and generally 2.5m wide with an aisle of 8.0m. A small number of spaces are 2.6m wide where the aisle reduces to 7.0m in width. All of these are suitable for use by Class 2 users (those that are unfamiliar with the car park).

9.2.2.3 The mobility spaces shown are 5.0m long, 3.6m wide and have an aisle of 8m. These dimensions also meet the District Plan requirements.

9.2.3 Rule 29.5.3: Gradient of Parking Spaces and Parking Areas

9.2.3.1 The plans provided show that the parking spaces will have a maximum gradient of at most 1 in 20 (5%) and flatter than this in many locations.

9.2.4 Rule 29.5.4: Mobility Parking Spaces

9.2.4.1 As set out above, the proposal will include 52 units with kitchens and 179 rooms without kitchens. The former requires 3 spaces for mobility impaired people (2 for guests and 1 for staff) with the latter requiring 4 spaces for mobility impaired people (2 for guests and 2 for staff). The provisions of part b of the Rule means that only the higher number of spaces applied, meaning that 4 mobility spaces are required.

9.2.4.2 The overarching requirement for mobility spaces derives from the Building Act, which in turn sets out that an acceptable solution is to provide the number of spaces required under Standard NZS4121:2001 ('Design for Access and Mobility: Buildings and Associated Facilities'). As the layout provides 226 spaces, the Standard requires 5 mobility spaces. These are provided.



9.2.5 *Rule 29.5.5: Drop Off / Pick Up (Set-Down) Areas*

- 9.2.5.1 Under this Rule, additional drop-off / pick-up spaces are required for day care, educational and health care facilities. These are not proposed at the site.

9.2.6 *Rule 29.5.6: Reverse Manoeuvring*

- 9.2.6.1 Under this Rule, reversing onto Ayr Avenue is not permitted from any of the car parking areas due to the number of spaces provided. Further, under this Rule, no more than one reverse movement is to be carried out by a vehicle or entering a “required” parking space. This is applied by the Council as meaning that a vehicle entering a parking space and then exiting again can undertake no more than one reverse movement in total (rather than one reverse movement upon entry plus one reverse movement on exit).

- 9.2.6.2 As noted above, the dimensions of the spaces exceed the District Plan and/or overarching Standard and so it is not expected that there will be any difficulties in achieving this requirement for one reverse movement. The parking aisle connects two points of access onto Ayr Avenue and thus drivers can travel through the majority of the parking areas and exit again if necessary without any reversing taking place.

- 9.2.6.3 There is no turning head provided at the eastern end of the parking aisle. The aisle is 8m wide in this location, which provides sufficient width for a B99 car to turn if necessary.

9.2.7 *Rule 29.5.7: Residential Parking Space Design*

- 9.2.7.1 In the event that the accommodation is used by those working at the studio, then they may be present for some time and thus the parking spaces may function as those they were associated with residential activity. However the provisions of this Rule relate to garages, which are not proposed in this instance.

- 9.2.7.2 The spaces are appropriate for Class 2 users (those unfamiliar with the car park) but will also be suitable for Class 1 users (regular users of the car park).

9.2.8 *Rule 29.5.8: Queuing*

- 9.2.8.1 Under this Rule, queuing space can be apportioned in accordance with the expected use of the accesses. In view of access to the external roading network being from the south/east we expect that the majority of vehicles will enter via this route and accordingly, we consider that 30m queuing length is required at this access. This is achieved.

- 9.2.8.2 The northern access will have less traffic. A queuing space of over 24m is provided, which is sufficient for the access to serve up to 150 spaces, and this is ample.

9.2.9 *Rule 29.5.9: Loading Spaces*

- 9.2.9.1 Loading facilities are only required under the District Plan for specific land use zones, and the site is zoned in a different way to these. This under the District Plan, this Rule is not triggered. However it is understood that, as the activity is non-complying, loading is a matter that can be assessed.

- 9.2.9.2 For the studios, deliveries will be made via the northern access. There is a large ‘back lot’ area provided adjacent to the studios for deliveries to be made by trucks, with these vehicles then being able to turn within this area and exit the site in a forwards direction.



9.2.9.3 There is an area located towards the north of the site and east of the studios, where a small car parking area (6 spaces) is provided, and loading is expected to occur in this area also.

9.2.9.4 Although there is no dedicated loading area provided at the visitor accommodation, there is ample space available at the porte cochere area for service vehicles to be present. While this would also be the area used for coach parties, the nature of service vehicles is that they are not present at peak times of guest arrivals and departures.

9.2.10 *Rule 29.5.10: Surface of Parking Spaces, Parking Areas and Loading Spaces*

9.2.10.1 The parking spaces can be formed, sealed and marked as required.

9.2.11 *Rule 29.5.11: Lighting of Parking Areas*

9.2.11.1 As the parking areas serve non-residential activities, they are required to be illuminated. There are no reasons why this cannot be achieved.

9.2.12 *Rule 29.5.12: Bicycle Parking and the Provision of Lockers and Showers*

9.2.12.1 Cycle parking facilities are not required at visitor accommodation or for residential activity.

9.2.12.2 The proposed function venue is smaller than 500sqm in size and therefore no cycle parking is required.

9.2.12.3 In practice, although no cycle parking is required within the site, the site is large and there are therefore no constraints to cycle parking being provided if demand arises.

9.3 **District Plan Chapter 29: Access**

9.3.1 *Rule 29.5.13: Access and Road Design*

9.3.1.1 The site gains access in two locations onto Ayr Avenue. In practice the northern access is an extension to the car parking aisle, and is formed with a width of 7.2m. This is the minimum necessary to enable large trucks to enter from this direction, due to the accessway being slightly curved. The southern access is more akin in design to a roadway, and the width varies between 6m and 10m, with the latter being widening on curves to enable a coach to pass a car.

9.3.1.2 Both accesses achieve the expected carriageway widths set out in the Council's Land Use and Subdivision Code of Practice.

9.3.1.3 In view of the likely usage of the access roads, it is not unreasonable for them to be considered as Road Type E12. Consequently it is anticipated that cyclists (if any) can share the movement lane, but that separate footpaths are required for pedestrians. The plans provided show a network of walking routes in the area leading between the site and Ayr Avenue, albeit not necessarily running parallel to the access roadways. However, it is considered that the provision made for walking movements to and from the site is appropriate.

9.3.1.4 In respect of the gradients of the accessways, these fall well within the maximum of 1 in 8.

9.3.1.5 For clarity, under part (c) of this Rule, no vehicle access is anticipated to serve sites with a potential to accommodate more than 12 units on the site (and adjoining sites). The consented hotel breaches this Rule already, and by way of comparison, whereas 12 units could be



expected to generate 96 vehicle movements per day (two-way), the traffic generation of the consented hotel is nearly 3,000 vehicle movements per day (two-way). However Ayr Avenue has been constructed to a high standard (essentially the same as a vested road), and the additional traffic generated by the proposed development will not have adverse effects on the safety or efficiency of the road.

9.3.2 *Rule 29.5.14: Width and Design of Vehicle Crossings – Urban Zones*

9.3.2.1 Although the zone is rural, the activity itself and Ayr Avenue are commensurate with an urban environment and so the vehicle crossings have been assessed as urban.

9.3.2.2 Because Ayr Avenue is not vested, the location of the vehicle crossing at the boundary of the lot is difficult to identify in practice. However for non-residential activity, a width of up to 9m is permitted, and this is achieved. The vehicle crossings enter the site at a 90-degree angle, and they can be constructed to meet Diagram 7.

9.3.3 *Rule 29.5.15: Width and Design of Vehicle Crossings – Rural Zones*

9.3.3.1 As noted above, the vehicle crossings have been assessed as urban.

9.3.4 *Rule 29.5.16: Maximum Gradient for Vehicle Access*

9.3.4.1 The plans provided show that the access gradients are considerably flatter than the maximum of 1 in 6.

9.3.5 *Rule 29.5.17: Minimum Sight Distances from Vehicle Access on all Roads other than State Highways*

9.3.5.1 Ayr Avenue is subject to a maximum speed limit of 30km/h, but the speed limit values set out within this Rule only extend to 50km/h. However, extrapolating the values of the Rule shows that a sight distance of 38m is appropriate for non-residential activities.

9.3.5.2 It is helpful that vehicle crossings are already formed in the location of the crossings that will serve the site, as this enables measurement of the existing sight distances. On-site measurements show that over 80m is provided in each direction and at both locations.

9.3.6 *Rule 29.5.18: Minimum Sight Distances from Vehicle Access onto State Highways*

9.3.6.1 The site does not have frontage onto a state highway.

9.3.7 *Rule 29.5.19: Maximum Number of Vehicle Crossings*

9.3.7.1 Two vehicle crossings are proposed, which meets the expectations under the Rule for a Local Road.

9.3.8 *Rule 29.5.20: Minimum Distance Between Vehicle Crossings onto State Highways*

9.3.8.1 The site does not have frontage onto a state highway.

9.3.9 *Rule 29.5.21: Minimum Distances of Vehicle Crossings from Intersections*

9.3.9.1 There are no intersections within 25m of the vehicle crossings.



9.3.10 Rule 29.5.22: Minimum Distances of Vehicle Crossings from Intersections onto State Highways

9.3.10.1 The site does not have frontage onto a state highway.

9.3.11 Rule 29.5.24: Service Stations

9.3.11.1 The proposed activity is not a service station.

9.4 Summary of District Plan Compliance

9.4.1 On the basis of this analysis, only one non-compliance with the transportation Rules of the District Plan has been identified. This is in respect of Rule 29.5.13(c) which requires that no vehicle access serve sites with a potential to accommodate more than 12 units. Ayr Avenue is not vested and therefore falls within this Rule. However the consented hotel generates vastly more traffic than the 12 units noted in the Rule, and as it has been constructed to a high standard, the additional traffic generated by the proposed development will not have adverse effects on the safety or efficiency of Ayr Avenue.

9.4.2 For completeness, the site design differs from the expectations of two Rules:

- Rule 29.5.9: Loading Spaces
 - No dedicated loading facility is proposed for the site when used as visitor accommodation. However the porte cochere provides an area where such vehicles can be present
- Rule 29.5.13: Access and Road Design
 - Pedestrian provision for walking movements between the site and Ayr Avenue is not made via footpaths alongside the access roads, but via off-road routes.

9.4.3 It is not considered that these design differences would give rise to adverse effects that are more than minor.



10. Conclusions

- 10.1. This report has identified, evaluated and assessed the various transport and access elements of a proposed 'screen hub' complex at Ayrburn. The proposal includes accommodation, which would be used as visitor accommodation when not required by a production based at the proposed studios.
- 10.2. From a transportation perspective, the greatest potential traffic generation arises from the use of the visitor accommodation. However even when allowing for traffic associated with the consented hotel in the area, the changes due to the use of the site for visitor accommodation are modest. Accordingly, it is considered that the traffic generated by the development can be accommodated on the adjacent roading network without capacity or efficiency issues arising, with changes in queuing and delay at the closest intersections being small.
 - 10.2.1. While the existing Arrowtown – Lakes Hayes Road / Ayr Avenue and Arrowtown – Lakes Hayes Road / Speargrass Flat Road intersections are able to accommodate the additional traffic, the analysis indicates that auxiliary right-turn lanes will be required under various scenarios for the consented and proposed development.
 - 10.2.2. The analysis carried out has been conservative, based upon the proposed activities generating traffic at the same time as consented activities and events being held at the consented Haybarn. However under this framework, the proposed development triggers the need for a right-turn lane from south to east (Lake Hayes – Arrowtown Road to Hogans Gully Road). The provision of a right-turn lane from north to west (Lake Hayes – Arrowtown Road to Speargrass Flat Road) depends on whether the hotel or the retirement village is constructed. With the hotel in place, the right-turn lane is warranted irrespective of the proposed development.
 - 10.2.3. The crash history in the vicinity of the site does not indicate that there would be any adverse safety effects from the proposal.
 - 10.2.4. The development is unlikely to lead to any significant increase in walking and cycling in the area due to the distances to potential destinations, but if there is an increase, it is considered that the existing infrastructure is easily able to accommodate these.
 - 10.2.5. The site layout provides sufficient car parking spaces to meet demand, other than the scenario where the studios are in use and there is also a function being held. Under this scenario, it is recommended that studio staff temporarily relocate their vehicles into the studio rear lot to create parking spaces for function attendees.
 - 10.2.6. A review of the site layout has identified only one non-compliance with the transportation Rules of the District Plan, in that Ayr Avenue is not vested but will serve more than 12 units. However the consented hotel generates vastly more traffic than the 12 units noted in the Rule, and as Ayr Avenue has been constructed to a high standard, the additional traffic generated by the proposal will not have adverse effects on the safety or efficiency of the road.
 - 10.2.7. As permitted under the District Plan, coach parking is provided through repurposing car parking, and the site layout has been designed with this in mind.
 - 10.2.8. Overall, and subject to the preceding comments, the proposal can be supported from a traffic and transportation perspective and it is considered that there are no traffic and transportation reasons why it could not be approved.



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