

UNDER

The Resource Management Act
1991

IN THE MATTER OF

An application by Glenelg
Gospel Trust to subdivide land
and develop a church at 326
Factory Road, Mosgiel

BRIEF OF EVIDENCE OF ANDREW DAVID CARR

1. INTRODUCTION

Qualifications and Experience

- 1.1 My full name is Andrew (Andy) David Carr.
- 1.2 I am a Chartered Professional Engineer and an International Professional Engineer (New Zealand section of the register). I hold a Masters degree in Transport Engineering and Operations and also a Masters degree in Business Administration.
- 1.3 I am a member of the national committee of the Resource Management Law Association and the immediate past Chair of the Canterbury branch of the organisation. I am also a Member of the Institution of Professional Engineers New Zealand, and an Associate Member of the New Zealand Planning Institute.
- 1.4 I have more than 26 years' experience in traffic engineering, over which time I have been responsible for investigating and evaluating the traffic and transportation impacts of a wide range of land use developments, both in New Zealand and the United Kingdom.
- 1.5 I am presently a director of Carriageway Consulting Ltd, a specialist traffic engineering and transport planning consultancy which I founded in early 2014. My role primarily involves undertaking and reviewing traffic analyses for both resource consent applications and proposed plan changes for a variety of different development types, for both local authorities and private organisations. I am also a Hearings Commissioner and have acted in that role for Greater Wellington Regional Council, Ashburton District Council, Waimakariri District Council and Christchurch City Council.
- 1.6 Prior to forming Carriageway Consulting Ltd I was employed by traffic engineering consultancies where I had senior roles in developing the business, undertaking technical work and supervising project teams.
- 1.7 I have carried out a number of commissions which have involved assessing the traffic and transportation effects of developments which create short-term, 'peaky' traffic effects. This has included evaluating eight new or expanded schools, three new churches, and two major

sporting venues (Addington rugby stadium and Hagley Oval, both in Christchurch). As a result, I consider that I am fully familiar with the particular traffic-related issues associated with developments of this nature.

- 1.8 Although this is a Council hearing, I confirm that I have read the Environment Court's Code of Conduct for expert witnesses (December 2014) and I agree to comply with it. My qualifications as an expert are set out above. I confirm that the issues addressed in this statement of evidence are within my area of expertise except where I state I am relying on what I have been told by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of Evidence

- 1.9 In this matter, I have been asked by the applicant Glenelg Gospel Trust to review and assess the traffic-related effects of their proposal to develop a church at 326 Factory Road, Mosgiel.
- 1.10 I previously carried out an assessment of the traffic effects arising from the proposal, and these were set out in a Transportation Assessment which accompanied the resource consent application. The initial parts of my evidence are drawn from this report, although I have summarised a number of matters to avoid unnecessary repetition.
- 1.11 I have also reviewed the submissions that have been received on the proposal. I have identified and responded to those that highlight potential traffic-related concerns.
- 1.12 Finally, I address the comments and matters raised by the Council's reporting officers.

Executive Summary

- 1.13 Having evaluated and assessed the various transport and access elements of the proposal, I consider that the traffic generated can be accommodated on the adjacent roading network without capacity or efficiency issues arising, even when the maximum number of attendees are present. In my view, the accident history in the vicinity of the site

does not indicate that there would be any adverse safety effects from the proposal and the sight distances available for development-related traffic are appropriate.

- 1.14 I consider that the proposed site layout complies with all transportation requirements of the District Plan, and having read the Council officers reports, I note that there are no matters of contention in respect of the transportation effects of the proposal. The Council's transportation planner Mr Fisher recommends five transport-related conditions of consent, and I concur with each of these.
- 1.15 Having reviewed the submissions received, I remain of the view that the proposal is unlikely to result in increased road safety risk or extensive queues and delays on the adjacent roading network.
- 1.16 On the basis of my analyses, I am able to support the proposed development from a traffic and transportation perspective.

2. **TRANSPORTATION NETWORKS**

- 2.1 The site is situated approximately 3.3km northeast of Mosgiel town centre, to the immediate south of the Factory Road / Puddle Alley intersection and is zoned as Rural in the Dunedin City District Plan ('District Plan'). The District Plan classifies Puddle Alley at the site frontage as a Collector Road, a type of road which "*distribute and collect local traffic within and between neighbourhoods and...provide for traffic movement and property access*"¹. Factory Road and Puddle Alley north of the site are District Roads, which "*provide connections between the regional roads and connect major rural, suburban, commercial and industrial areas*"².
- 2.2 Towards the east of the site, Puddle Alley has a rural road formation, with no kerbs or edgelines but a centreline. The road is subject to an 80km/h speed limit and has a gently curving horizontal and vertical alignment. Towards the south of the site, the road descends and curves

¹ District Plan, Method 20.4.2

² Also District Plan, Method 20.4.2

towards the west, with the vertical alignment meaning that sections of the road have a batter slope on both sides.

- 2.3 Factory Road lies towards the north of the site. This is also a rural road and it is subject to an 80km/h speed limit.
- 2.4 Factory Road meets Puddle Alley at a priority ('give-way') intersection, but the arrangement is somewhat unusual in that the northern approach is also known as Puddle Alley. There an auxiliary right turn lane for vehicles turning from Factory Road to Puddle Alley (southeast) but no auxiliary lane for left-turning vehicles. The minor approach meets the major road on a curve at the latter, and there are chevron boards to alert drivers to the alignment (but no advisory speed limit is provided at the corner). The sight distance for vehicles emerging from Puddle Alley (southeast) to the north is considerable (in excess of 300m) but to the south is limited by a field boundary to 135m.
- 2.5 None of the roads in the area have footpaths and there is also no cycling infrastructure. Neither Puddle Alley nor Factory Road are included within the Dunedin Strategic Cycle Network although for completeness I note that the urban section of Factory Road (which lies 2km west of the site) is part of a strategic cycle route.
- 2.6 There are no bus stops in the immediate vicinity.
- 2.7 The Dunedin City Integrated Transport Strategy does not include any changes to the transportation networks in the vicinity of the site.

3. **CURRENT TRANSPORTATION PATTERNS**

Traffic Flows

- 3.1 Dunedin City Council carries out regular traffic counts on the key vehicle routes throughout the city, but no turning volumes are available at the Factory Road / Puddle Alley intersection. Consequently I undertook fresh traffic surveys during the evening peak period (3:30pm to 6:00pm) of Monday 25 May 2015.
- 3.2 The data collected is shown on Figure 4 of the Transportation Assessment, but in summary, the traffic volumes observed at the

intersection were relatively low, with a total of 215 vehicles observed in the peak hour of which 84% were associated with the 'straight ahead' movement on the major road. Very few heavy vehicles were observed, and including all survey data collected, heavy vehicles comprised just 2.0% of the total traffic flow.

- 3.3 The Austroads Guide to Traffic Management Part 3 (*'Traffic Studies and Analysis'*) sets out thresholds regarding the need for detailed traffic analyses at intersections, and the traffic flows below which detailed analyses of unsignalised intersections are unnecessary. The current traffic flows passing through the Factory Road / Puddle Alley intersection in the evening peak hour are significantly below these thresholds and accordingly a detailed analysis of the intersection performance is not required.
- 3.4 The Austroads Guide to Traffic Management Part 3 (*'Traffic Studies and Analysis'*) also sets out a method by which the level of service provided by a road can be calculated. Using this method, I have found that Factory Road presently provides Level of Service B, which is described by the guide as *"in the zone of stable flow where drivers still have reasonable freedom to select their desired speed and to manoeuvre within the traffic stream"*. Puddle Alley (adjacent to the site) provides Level of Service A, described as *"a condition of free flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent"*.

Non-Car Modes of Transport

- 3.5 The volumes of pedestrians and cyclists using Factory Road and Puddle Alley were also observed during the survey. However none were recorded.
- 3.6 In the Transportation Assessment, I acknowledged that the route is unlikely to be used for commuter travel on foot or by cycle, because the location of major employers is not within the typical distances covered by these modes of transport, and that it was possible that there was some use of the road network for recreational walking and cycling at

weekends. This matter has been raised in some submissions and I address it more fully subsequently in this evidence.

- 3.7 There are no bus routes which use Factory Road or Puddle Alley. The closest service passes 1.9km towards the west (the 'Mosgiel Loop' which operates with a 40-minute frequency).

Road Safety

- 3.8 I used the NZTA Crash Analysis System to establish the location and nature of the recorded traffic accidents in the vicinity of the development site. All reported accidents on Factory Road and Puddle Alley between 2010 and 2014 (plus the partial record for 2015) were identified over a distance of 200m on either side of the site. This showed that there were six reported accidents in the area (shown on Figure 5 of the Transportation Assessment).
- 3.9 Of the six accidents, only one resulted in any injuries. This occurred towards the southwest of the study area when a vehicle reversing from a private driveway was struck by a passing vehicle travelling from north to west, and caused minor injuries.
- 3.10 The remaining accidents did not result in injuries. Three accidents occurred at the Factory Road / Puddle Alley intersection, of which two involved only a single vehicle travelling from north to west which lost control and left the road. However these were as a result of the curve of the road rather than the intersection per se. One accident occurred when a driver emerging from Puddle Alley failed to give-way and was struck by a vehicle travelling from north to southwest.
- 3.11 One of the two remaining accidents also occurred due to the curve of the road, and involved a driver losing control of their vehicle and skidding off the road. One accident took place at the entrance to the Invermay Research Facility towards the north of the Factory Road / Puddle Alley intersection when a car turning right into the site was struck by a southbound vehicle.
- 3.12 Overall, three of the six accidents arose due to a vehicle entering the curve too quickly and the driver losing control. However I am aware that in the past two years, yellow chevron boards have been installed at the

curve to make it more conspicuous and no accidents of this nature have been recorded since then.

- 3.13 The sight distances at the Factory Road / Puddle Alley intersection (135m and more than 300m, to the left and right respectively) are appropriate for vehicle speeds of 64km/h and 100km/h (under the Austroads Guide to Road Design Part 4A ('Unsignalised and Signalised Intersections')). In view of the horizontal curve in the road which reduces vehicle speeds from the maximum 80km/h permitted, in my view these sight distances are appropriate.
- 3.14 The remaining three accidents occurred at different locations, and there do not appear to be any common causes that suggest any inherent deficiencies in the roading network.

4. **CURRENT TRANSPORTATION PATTERNS**

- 4.1 The details of the proposal have been described by others and I adopt their descriptions for the purposes of my evidence.
- 4.2 From a transportation perspective, the key issues are that the traffic generation of the church will be intermittent, and will vary considerably. As set out in Table 2 of the Transportation Assessment, for the majority of services there is expected to be between 50 to 250 people attending. However once every two or three weeks, a congregation of up to 800 people might occur, and a capacity event (which will take place at most once every six months) might attract up to 1,300 people.
- 4.3 The church will be served by a car park of 160 spaces, including four spaces that are suitable for the mobility impaired. The car park access will be onto the Puddle Alley, approximately 100m southeast of the Factory Road / Puddle Alley intersection. No auxiliary turning lanes will be provided at the access and no associated widening of Puddle Alley is proposed.
- 4.4 A service access is proposed towards the south of the site, in the location of the current site access. Due to the acute angle at which the access meets Factory Road, this is not proposed to be used by the congregation and its use will be restricted.

- 4.5 The proposed layout includes a pedestrian walkway across the car park to the main building entrance. I understood that this will be raised where it crosses the parking aisle, in part to act as a focus for pedestrian movements and to ensure that they are accommodated safely but also to act as traffic calming devices to reduce the speeds of vehicles within the aisles.

5. **TRAFFIC GENERATION AND DISTRIBUTION**

- 5.1 Data provided by the applicant and based on surveys carried out at the existing church in Kaikorai Valley shows an average traffic generation of 0.254 (car) trips per person, based on data collected with a congregation of 465 people who travelled in 118 cars. Using this information, I have calculated the traffic generation for each expected event. I have also made an allowance of adding a further 15% in the figures to accommodate growth at the church (other than for the absolute maximum capacity events where no additional allowance was made).
- 5.2 In my experience, it is likely that the bulk of arrivals at the church will take place over the 30 minutes prior to a service starting, but departures are likely to occur within a more condensed timeframe. However I consider that the layout of the car park itself will restrict vehicle movements onto the frontage road as there is (deliberately) only one exit lane to avoid the potential for queuing to arise at the Factory Road / Puddle Alley intersection.
- 5.3 For very large events, traffic typically arrives and departs over a much more extended period of time, and higher use is likely of vehicles such as minibuses and coaches which have a greater vehicle occupancy. I consider that both of these factors will reduce the impacts of the traffic flows associated with the larger events.
- 5.4 Table 3 of the Transportation Assessment shows the expected traffic generation of the proposal. Typically volumes of 44 to 72 vehicles will enter the site prior to a service with the same number exiting again afterwards. However a service attracting 800 people would give rise to up to 233 vehicles entering and exiting, with 330 vehicles entering and exiting for a capacity event (in the unlikely event that all attendees used

a private car to travel to the site, rather than the expected coaches and minibuses).

- 5.5 The distribution of trips associated with travel to and from any church will change over time as new members join and existing members move on. However, in this instance there are two generic routes that could be used to travel between the existing church location and that which is proposed, via Three Mile Hill Road towards the north or via the Southern Motorway towards the south. From my measurements, the former is shorter (12.3km compared to 16.2km) but the difference in journey time is minimal (about 1.5 minutes) due to the latter having a better vertical and horizontal alignment. The alignment may also make the Southern Motorway more attractive to less confident drivers.
- 5.6 Accordingly, for the purposes of my analysis, I considered two scenarios. One allowed for 70% of traffic to approach from and depart to the southwest at the Factory Road / Puddle Alley intersection and the other allowed for 70% of traffic to approach from and depart to the north at the intersection.

6. EFFECTS ON THE TRANSPORTATION NETWORKS

Network Capacity

- 6.1 Taking into account the traffic generation and distribution noted previously (plus the 15% contingency) I have evaluated the effects at the Factory Road / Puddle Alley intersection. For this assessment, I allowed for vehicles to arrive over a 30-minute period before a service/event and depart over 20 minutes once the service/event ends. I also adopted the observed weekday peak hour flows as being representative of the prevailing conditions at the times when the church would generate traffic. I consider that this is a conservative approach because in the vast majority of instances, the peak traffic generation of the church will not coincide with the peak traffic flows on the road network. As a result, I consider that the forecast queues and delays at the intersection are likely to be higher than will be seen in practice.
- 6.2 My modelling of the performance of the Factory Road / Puddle Alley intersection showed that excellent levels of service will continue to be

provided on all approaches, with minimal queues and delays.

Unsurprisingly, the highest delays occur under the scenario of 800 people in the congregation with 70% of these turning to the right onto Puddle Alley (north), but even under this situation, delays of less than 11 seconds per vehicle can be expected.

- 6.3 At the site access itself, my calculations showed that the traffic volumes fall below the thresholds at which a detailed analysis is required, and therefore I consider that the access will operate with an excellent level of service.

Non-Car Modes of Transport

- 6.4 The presence of the church will result in higher traffic volumes on both Factory Road and Puddle Alley, and will therefore result in reduced crossing opportunities for any pedestrians in the area. However, my survey showed that pedestrian numbers are very low due to the lack of amenities and employment opportunities within a viable walking distance, and as the church traffic generation is generally low for the majority of the time in my view there would be negligible impact on pedestrians.
- 6.5 Within the site itself, there is provision made for pedestrians to walk through the car park, which will reduce any potential for conflicts between those walking and drivers seeking a parking space.

Road Safety

- 6.6 In my view, the accident history in the vicinity of the site does not indicate that there are any particular features or factors that would affect, or be affected by, the proposed development.
- 6.7 Sight distances at the proposed site access are 80m towards the left (north) and 175m towards the south (right). Under the Austroads Guide to Road Design Part 4A (*'Unsignalised and Signalised Intersections'*) these distances are appropriate for approach speeds of 45km/h and 80km/h. The latter corresponds to the maximum permitted speed on the road, but the former is considerably less than the legal maximum. However in this instance, all traffic approaching the site from the north will have slowed to negotiate the Factory Road / Puddle Alley

intersection and I anticipate that they will be travelling at speeds in the order of 40km/h. I consider that the sight distance is therefore appropriate for the prevailing vehicle speeds.

7. DISTRICT PLAN MATTERS

- 7.1 The District Plan sets out a number of transportation-related rules with which any development is expected to comply. Having reviewed the proposed development against these rules, I conclude that it complies with all of the transportation requirements.
- 7.2 For completeness, there is likely to be a shortfall in the number of on-site parking spaces at the times when the very largest of events are held, but for the services with 920 people³ there may be an overflow of up to 73 vehicles. Anticipating that these are parked on the balance of the lot (which is adjacent to the sealed car park), I do not consider that any adverse safety or efficiency effects will arise due to the limited number of times that this scenario will occur.
- 7.3 I also note that there is likely to be off-site parking when one of the capacity events is held. However under this situation, I have recommended that a traffic management plan should be put in place, as discussed later in my evidence, due to the use of larger vehicles (minivans and coaches) for which there is no specific provision within the site. This Plan can also address overall parking management.

8. SUBMISSIONS

- 8.1 I have read each of the submissions to identify those which raise transportation-related matters, and I address each of these below. In some instances, the issue raised has not been specific or included any detail, and in such cases, my response is necessarily generalised. For clarity, the matters are not listed in any particular order.

³ That is, a congregation of 800 people plus a 15% contingency.

Submitter Concern: Adverse Road Safety Effects will arise at the Factory Road / Puddle Alley Intersection

- 8.2 My review of the prevailing road safety records does not indicate any particular road safety concerns in this location. Only one accident over the past five years has been recorded as a result of turning movements at the intersection, indicating that it operates with a good safety record.

Submitter Concern: No Data is Provided to Justify the Acceptability of the Reduced Sight Distance of 135m to the Left at the Factory Road / Puddle Alley Intersection

- 8.3 The provision of adequate sight distances is a critical element in ensuring that any intersection operates safely. Where sight distances are deficient for the prevailing environment, it is common for safety issues to arise. In this case, the sight distance is existing (that is, it is not proposed as part of the development) and as such it is possible to review whether it has given rise to any adverse safety effects in the past.
- 8.4 In the Transportation Assessment, I noted that only one accident had occurred in the past five years as a result of turning traffic at the intersection which indicates a good safety record. In view of the submission, I have reviewed the accident records for the previous ten years (2000 to 2009) and note that in this period no accidents were recorded that were associated with turning vehicles.
- 8.5 Consequently I do not consider that the restricted sight distance has led to any road safety issues arising in the past. On this basis, I conclude that it is appropriate for the prevailing speed environment.

Submitter Concern: There may be Increased Queuing at the Factory Road / Puddle Alley Intersection

- 8.6 My analysis shows that there will be an increase in queues at the intersection (in the worst case, up to six vehicles on Puddle Alley (east) waiting to exit onto Factory Road). However delays are low, indicating that it is likely to be a rolling queue. Levels of Service remain very good, and consequently I do not consider that the queues will result in adverse efficiency effects.

- 8.7 Another submitter notes that a queue of more than two vehicles waiting to turn right from Factory Road into Puddle Alley would obstruct through traffic. My analysis shows that the forecast queue length is just one vehicle.

Submitter Concern: The Existing Access from Factory Road should be Restricted

- 8.8 Due to the angle at which the existing access meets Factory Road, and the absence of any turning lane, I agree that the use of this access should be tightly controlled. I understand that appropriate mechanisms will be put in place to ensure that this is the case, and I also note that the Council's transportation planner proposes a condition of consent which will enable the safety/functionality of the service access to be reviewed.

Submitter Concern: There will be Significant Queues at the Site Access

- 8.9 My analysis shows that even at the busiest times, the traffic flows at the site access are such that they fall below thresholds at which a detailed analysis of the queues and delays is required (that is, it effectively operates under free-flow conditions).

Submitter Concern: There will be Adverse Effects at the Driveway to Rapid 322

- 8.10 This property lies to the southwest of the Factory Road / Puddle Alley intersection, and based on aerial photographs it has two accesses, one directly onto Factory Road approximately 200m southwest of the intersection and the other using the same laneway/accessway as proposed for the secondary site access.
- 8.11 Traffic flows passing the driveway onto Factory Road will undoubtedly increase as a result of the proposal. However this outcome would arise if *any* significant development occurred towards the north of the property. Moreover, I expect that driveway movements will be minimal for the 30 minutes that church traffic will arrive and 20 minutes that they will depart the site, making conflicts unlikely.
- 8.12 As noted previously, the use of the secondary site access will be tightly controlled and I do not anticipate that there will be a significant increase

in traffic movements using it, thereby avoiding any adverse effects at Rapid 322.

Submitter Concern: No Allowance has been Made for Cycle Racing on the Rooding Network

- 8.13 At least three submitters highlight that cycle races are regularly held on this section of the rooding network. NZTA road rules set out that *“three or more people cycling next to each other is illegal, except in the case of a road race that has been given traffic management approval from a road controlling authority”*⁴. Thus when races are being held, I anticipate that they will be subject to appropriate traffic management and the approval of the Council, meaning that any interaction between racing cyclists and church-related traffic can be addressed through the traffic management measures.

Submitter Concern: The Rooding Network is Well-Used by Pedestrians, Recreational Cyclists and Equestrians During Summer Months

- 8.14 In the Transportation Assessment, I acknowledged that because the traffic survey was carried out during a weekday winter evening, it was possible that there would be greater use of the rooding network by non-motorised users during weekends and in summer. This issue has been highlighted by several submitters.
- 8.15 I have reviewed the NZTA CAS database to identify any reported accidents over the past ten years that involved pedestrians, cyclists or equestrians on Puddle Alley and Factory Road within 1km of the site. However, no such accidents have been reported and I therefore conclude that the different types of users are able to share the road safely.
- 8.16 The mingling of different road users within a rural environment is not uncommon or unusual, and in this instance, the church visitors are likely to regular users of the road network who will be aware of the potential to encounter pedestrians, cyclists or equestrians. As a result, while the proposal will increase the number of vehicle movements, I do not

⁴ <https://www.nzta.govt.nz/resources/roadcode/cyclist-code/about-cycling/rules/>

consider that there is any evidence to suggest that it will result in adverse road safety effects.

Submitter Concern: Adverse Effects will arise if there is an Event at the Church and an Event at the Wingatui Racetrack

8.17 Having reviewed the website of the Otago Racing Club⁵, there are 15 events listed during the 2015/16 season at the Wingatui Racecourse of which just six are held at weekends. I therefore consider that there is only a limited potential for these to coincide with an event at the church. Moreover, the largest events at the church will be controlled by a traffic management plan, and if necessary, in my view this can address any issues of cumulative effect.

Submitter Concern: The Car Occupancy (Approximately Four People per Vehicle) is Too High

- 8.18 This particular data has been provided by the applicant and has not been verified independently since the information publicly available for the traffic generation of churches is extremely limited (for example, the New Zealand Trips and Parking Database has only three surveys and all date from 19 years ago).
- 8.19 I agree that at face value, the figure appears high. However I am aware of survey data presented for other churches that shows typically around 90% of attendees will use a car (either as a passenger or driver) and that the use of non-car modes of transport is limited to around 10%.
- 8.20 The Dunedin City District Plan is unusual in not having a parking requirement that can be easily applied to the proposed church. However I have reviewed several other District Plans⁶, and note that churches generally fall within the category of 'places of assembly' or similar. The requirement for parking is typically 1 space per 10 seats, indicating that very high car occupancy is anticipated.
- 8.21 I have also made inquiries with the applicant in respect of the information, and have been advised that due to the family-orientated

⁵ <http://www.wingatui.co.nz/pages/13/What-s-On>

⁶ Queenstown Lakes District Plan, Central Otago District Plan, Ashburton District Plan.

nature of the church, car occupancy is very high because people travel in groups.

- 8.22 On this basis, I am comfortable that the car occupancy and associated calculations are appropriate. I also note that the Council's transportation planner proposes a condition of consent which will enable the extent of the on-site parking to be reviewed, and as set out below, I agree with this provision.

Submitter Concern: Areas of the Car Park May Not be Available During Major Events

- 8.23 I acknowledge that the erection of marquees and other temporary structures might result in areas of the car park becoming temporarily unavailable when a major event is being held. However, I anticipate that under these circumstances, greater use of vans, minibuses and coaches will be made which will reduce the demand for parking.
- 8.24 As the extent of the use of temporary structures and non-car travel will vary, I expect that the effective use of the car parking area will be a matter that will be addressed through the traffic management plan. The Council's transportation planner proposes a condition of consent which ensures that this will be included.

Submitter Concern: Overflow Parking onto Grassed Areas is Problematic in Wet Weather

- 8.25 I agree that the regular use of grassed areas tends to result in difficulties in wet weather because the turf can be damaged by car tyres. Based on my experience of temporary parking management on grassed surfaces, the difficulties arise when the scenario occurs on a regular and frequent basis. In this instance, events that may lead to overflow parking will take place only once every 2-3 weeks.
- 8.26 I also note that there is sufficient area within the site to avoid the scenario of parking on grassed areas simply by sealing them. This would reduce the extent of landscaped area however, for an occurrence that is likely to happen infrequently.

Submitter Concern: The Car Park Layout may not be Suitable for Use by Coaches and Minibuses

- 8.27 Coaches and minibuses are likely to be used at times when a major event is being held (at most once every six months), and at these times, a traffic management plan will be put in place. I anticipate that this will specifically address the matter of such vehicles entering and circulating around the site. In this regard, I note that it is very common that when parking is actively managed (as would be necessary in this situation), various areas are often deliberately kept clear of parked vehicles to ensure that larger vehicles are able to manoeuvre easily.

Submitter Concern: The Amount of Parking Provided is Inadequate

- 8.28 I have calculated the amount of parking required within the Transportation Assessment, and in my view, the number of spaces provided is appropriate for the likely use (and frequency of use) of the site. I note that the Council's transportation planner proposes a condition of consent which will enable the extent of the on-site parking to be reviewed, and as set out below, I agree with this provision.

Submitter Concern: The Traffic Survey is Not Representative of the Actual Traffic Flows

- 8.29 One submission expresses concern that the survey was undertaken following a period of heavy snow in the city, and that as a result, the traffic flows may not be representative. They have carried out their own survey, which shows a volume of 87 vehicles on Factory Road within a 30-minute period.
- 8.30 I can confirm that the survey was carried out during winter and that several days prior to this there had been heavy snowfall. At the time of the survey however, no snow was evident either on the carriageway, by the side of the road, or in adjacent paddocks, and to my knowledge all major roads were open.
- 8.31 The submitter's survey data indicates that in an hour period, Factory Road could be expected to carry around 190 vehicles. This corresponds well to my traffic survey which recorded a peak hour flow of 188 vehicles.

- 8.32 I have also checked the NZTA CAS database, which included traffic flows sourced from Councils' RAMM databases. This reveals that Factory Road has a daily traffic flow of 2,200 vehicles (two-way). Typically, a road carries around 10% of its total volume in the peak hours, indicating that Factory Road has a peak volume in the order of 220 vehicles.
- 8.33 This is slightly higher than my observations, but the difference (30 vehicles per hour, equivalent to one vehicle every two minutes) is insufficient to materially affect my conclusions. Moreover, as I described previously, my assessment of the traffic effects allows for the traffic generated by the proposal to coincide with the peak traffic flows on the adjacent network, which in my view is a scenario that is likely to occur infrequently, if at all. In this way, there is a margin of error that is allowed for within all of my analyses.

9. COUNCIL OFFICER REPORTS

- 9.1 I have read the report of Mr Sycamore, the Council's planner, which in turn references a report by Mr Fisher, the Council's transportation planner.
- 9.2 Mr Fisher sets out that the surrounding transportation infrastructure is typical for a rural area, and confirms that neither Factory Road nor Puddle Alley form part of the Council's Strategic Cycle Network. He confirms that in his view the sight distances at the proposed access will be adequate for the prevailing traffic speeds, and notes that this access will need to be formed to meet the Council's normal requirements.
- 9.3 Mr Fisher highlights that the use of the service lane will be limited, and considers that the use of this access should be addressed through a Travel Management Plan as well as being subject to a s128 review condition to ensure that any adverse effects that may arise from its use can be managed. I agree with his views.
- 9.4 With regard to parking, Mr Fisher considers that the proposed on-site parking provisions are sufficient for typical services and events, and agrees with the provision of a Travel Management Plan to ensure that the traffic and parking demand at the more significant events is

appropriately managed. He also notes that the proposed layout meets or exceeds the Council's requirements for stall and aisle dimensions.

- 9.5 In Mr Fisher's view, the analysis of effects on the surrounding road network set out in the Transportation Assessment is "*reasonable*" and confirms that the Factory Road / Puddle Alley will operate with a high degree of efficiency.
- 9.6 Mr Fisher considers that there appear to be no specific crash trends on the roading network in the area, and that any effects on road safety of the proposal will be "*minor*", subject to recommended conditions of consent.
- 9.7 Finally, Mr Fisher proposes five conditions of consent. These relate to:
- a. Details of the formation of the main vehicle access from Puddle Alley;
 - b. Details of the formation of the secondary service access from Factory Road;
 - c. Details of the surfacing and marking of all parking, associated access and manoeuvring areas;
 - d. The provision of a detailed Travel Management Plan to mitigate the adverse effects of traffic and parking in relation to large services and events held at the church, prior to church activities within the site commencing.
 - e. The ability to review the transportation aspects of the activity pursuant to section 128 of the Resource Management Act, to ensure any adverse effects on the transportation network are sufficiently managed.
- 9.8 I concur with these five recommended conditions of consent.
- 9.9 Mr Sycamore notes that he has read, and agrees with, Mr Fisher's report.

10. CONCLUSION

- 10.1 Having evaluated and assessed the various transport and access elements of the proposal, I consider that the traffic generated can be accommodated on the adjacent roading network without capacity or efficiency issues arising, even when the maximum number of attendees are present. My analysis show that levels of service at the intersection remain very good, even allowing for all arrivals and departures to coincide with the existing peak hour on the road network.
- 10.2 In my view, the accident history in the vicinity of the site does not indicate that there would be any adverse safety effects from the proposal and the existing sight distances available for vehicles turning to or from Puddle Alley (southeast) are appropriate as the minor road lies on a curve of the major road.
- 10.3 I consider that the proposed site layout complies with all transportation requirements of the District Plan, although for completeness there is likely to be a small amount of overflow car parking during the very largest events. Such parking will take place on the balance of the lot adjacent to the sealed car park, and I do not anticipate that this is likely to result in any significant safety or efficiency effects arising.
- 10.4 I have recommended that one condition of consent is put in place, that the largest of events are controlled by a traffic management plan. In part this is due to the number of large vehicles that are likely to be present (minivans and coaches, for which there is no provision made within the site) and in part because of the potential for off-site car parking to occur.
- 10.5 Having read the Council officers reports, I note that there are no matters of contention in respect of the transportation effects of the proposal. The Council's transportation planner Mr Fisher recommends five transport-related conditions of consent, and I concur with each of these.
- 10.6 Having reviewed the submissions received, I remain of the view that the proposal is unlikely to result in increased road safety risk or extensive queues and delays on the adjacent roading network.
- 10.7 Overall, and subject to the preceding comments and conditions of consent, I am able to support the proposed development from a traffic

and transportation perspective and I consider that there are no traffic and transportation reasons why consent could not be granted.

A handwritten signature in purple ink, appearing to read 'A Carr', is positioned above a horizontal dotted line.

A Carr

Date: 20 October 2015