

**BEFORE INDEPENDENT HEARING COMMISSIONERS APPOINTED BY THE  
CENTRAL OTAGO DISTRICT COUNCIL**

**IN THE MATTER OF**

The Resource Management Act 1991 (**RMA** or  
**the Act**)

**AND**

**IN THE MATTER OF**

Of the Central Otago Operative District Plan  
(**CODP**) and Proposed Plan Change 19 to the  
Central Otago District Plan (**PC19**)

**AND**

**IN THE MATTER OF**

Applications to the Central Otago District  
Council (**CODC**) by **D. J Jones Family Trust**  
**and N.R Searell Family Trust** for subdivision  
and land use resource consents for residential  
subdivision and development at 88 Terrace  
Street, Bannockburn (**RC230398**)

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**EVIDENCE OF JASON ALEXANDER BARTLETT  
ON BEHALF OF D. J JONES FAMILY TRUST AND N.R SEARELL FAMILY TRUST**

**TRAFFIC AND TRANSPORTATION**

Dated: 27 September 2024

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## INTRODUCTION

- 1 My name is Jason Alexander Bartlett.
- 2 I hold a Bachelor of Engineering from the University of Canterbury awarded in 1996. I have been a Member of Engineering New Zealand (MEngNZ) since 1995 and obtained the New Zealand Certificate in Engineering, Civil Option in 1993.
- 3 I have over twenty five years' experience in road design, network management, traffic and transportation engineering including nine years in the UK. During my time in the UK I became a Chartered Engineer (CEng) and a Member of the Institution of Civil Engineers (MICE).
- 4 Since April 2008 I have been working as a traffic and transportation engineer in Queenstown. The first four of those years was for GHD Limited. I now operate my own traffic and transport engineering consultancy, Bartlett Consulting, which I established in July 2012.
- 5 I am a practicing traffic and transport consultant involved in a wide range of developments, district plan policy development and the preparation and presentation of expert evidence before Councils and the Environment Court.
- 6 In August 2021 I was asked to provided traffic and transport advice in relation to this application for resource consent (**Application**) to the Central Otago District Council (**CODC**) by D. J Jones Family Trust and N.R Searell Family Trust (**Trust or Applicant**). I am an independent expert witness to the Trust on traffic and transportation matters.
- 7 I have visited the Site on a number of occasions including during the preparation of my Transport Assessment and this evidence. I am familiar with the site and the surrounding transport environment from having been involved in the initial stage of this Application.
- 8 The Application was publicly notified and a number of submissions were received in support of, and in opposition to the Application. On 20 September 2024 the CODC released an Officer Report for prepared under section 42A of the RMA containing an analysis of the Application and a recommendation in response to the Application (**Officer Report**). I have reviewed the traffic and transportation elements of the submissions and the Officers Report.

- 9 Although this is not an Environment Court proceeding I have read the Environment Court's Code of Conduct and agree to comply with it. My qualifications as an expert are set out above. The matters addressed in my evidence are within my area of expertise, however where I make statements on issues that are not in my area of expertise, I will state whose evidence I have relied upon. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in my evidence.

#### **SCOPE OF EVIDENCE**

- 10 In my evidence I address the following issues:
- (a) The findings of my Transportation Assessment for the Site included in the Application.
  - (b) Those submissions in opposition that address matters within scope of my expertise, with particular emphasis on matters where there is a difference of view between myself and the submitter; and
  - (c) Those parts of the Officer Report that address matters within scope of my expertise, with particular emphasis on matters where there is a difference of view between myself and the Officer Report.

#### **CONTEXT**

- 11 The Trust has applied for a subdivision and land use resource consent for a residential subdivision comprising residential 20 lots, including the construction of an internal access road and rights of way, recreation reserve and balance lots (**Proposal**) at 88 Terrace Street, Bannockburn, legally referred to as Lot 4 DP339137 (**Site**).
- 12 The Site is 17.6ha in area and is accessed from the eastern extent of Terrace Street and is characterised as a large undeveloped residential zone allotment located at the edge of the existing Bannockburn township. The site is bounded by Shepherd's creek to the east, Revell's Gully to the north, undeveloped residential land to the west and existing residential land generally to the south. The Site is currently bare, vacant land.
- 13 The Site is zoned Residential Resource Area (4) (**RRA(4)**) in the CODP and is partially within a building line restriction overlay (**BLR**) identified on the CODP maps. A restricted discretionary activity resource consent is required under the Evidence of Jason Bartlett on Behalf of D. J Jones Family Trust and N. R Searell Family Trust dated 27 September 2024

CODP for subdivision in the RRA(4) zone and to locate buildings within the BLR.

## **TRANSPORT ASSESSMENT**

- 14 I have prepared a Transport Assessment for the Proposal which was included in the Application<sup>1</sup>. This section is a brief summary of my Transport Assessment.
- 15 The Site is to be subdivided to create 20 residential lots (Lots 1-20), a recreation reserve (Lot 30), balance lots (Lots 40, 50 & 51) and access lots for an onsite road network (Lots 100 & 101). The Site is located at, and will be accessed from, the current cul-de-sac end of Terrace Street.
- 16 Terrace Street is accessed from Bannockburn Road. Bannockburn Road is an urban local road with a 50km/hr speed limit. The assessed operating speed of Bannockburn Road, based on the road environment, is likely to be less than 60km/hr. I note that the sight distances at the intersection of Bannockburn Road with Terrace Street have been reviewed and meet the minimum Safe Intersection Sight Distance (SISD)<sup>2</sup> requirements for the operating speed (60km/hr). This intersection is formed as a simple give way control urban intersection which can accommodate the existing traffic flows and the anticipated increased traffic generation. The Proposal is unlikely to have any noticeable effects on the overall efficiency or safety of the existing intersection of Bannockburn Road with Terrace Street.
- 17 Terrace Street has an existing sealed carriageway width of approximately 7.0m and operates as two opposing traffic lanes and there is no identified, or observed, demand for onstreet car parking. This means that the existing formation of Terrace Street is able to accommodate both the existing and anticipated traffic generated by the Proposal.
- 18 The existing Terrace Street has no footpaths which means that pedestrians are required to share the carriageway with vehicles. Based on the CODC Addendum to NZS 4404:2004 Terrace Street would be expected to provide footpaths so that pedestrians are not required to share the road with vehicles. It is therefore recommended that a single 1.5m footpath be constructed along

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<sup>1</sup> Appendix E to the Original Application for a resource consent.

<sup>2</sup> Refer Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections, Section 3.2.2 Safe Intersection Sight Distance (SISD).

the full length of the existing Terrace Street and includes a footpath crossing over Bannockburn Road to allow pedestrians to access the existing footpath network on the western side of Bannockburn Road. This recommended footpath will improve overall pedestrian safety within Terrace Street and allow for increased traffic as a result of the Proposal. I note that this will result in Terrace Street having a general road formation similar to Hall Road.

- 19 The Proposal will include an onsite road network consisting of an extension of Terrace Street (Lot 101) and a separate loop road (Lot 100). These roads are to be formed with two opposing traffic lanes and will have a single footpath. The extension of Terrace Street will also provide indented parking for residents and visitors to the area. These roads will be provided as local roads and are more akin to a rural road as are other similar roads within Bannockburn including the existing Terrace Street. As such I am confident that these onsite roads can be designed and constructed to meet the requirements of the CODC Addendum to NZS 4404:2004.
- 20 Within my Transport Assessment I have recommended that street lighting is provided with the onsite road network. This recommendation is based on the provision for urban roads where street lighting is necessary when pedestrians are likely to be within the traffic lanes. The design response provided in the preliminary engineering plans<sup>3</sup> provides street lighting at intersections and footpath crossings. In other locations bollard lighting is provided to illuminate the footpaths and pedestrian areas within the road corridor. I confirm that I am comfortable with this approach given the road environment within Bannockburn.
- 21 The onsite development includes the existing right of way (ROW) currently serving Lot 36 DP339137 (36 Terrace Street). This ROW is already formed and I suggest remains unchanged. It forms the primary access to a single dwelling (at Lot 36 DP339137), it will be a secondary access or rear access to the Proposed Lots 2, 3 & 6 of which are expected to have a primary access from the extension of Terrace Street (Lot 101) or the loop road (Lot 100). I consider that leaving this existing ROW as currently constructed is appropriate and acceptable with respect to traffic.

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<sup>3</sup> Appendix A to the Original Application for a resource consent.

- 22 The Proposal includes a number of new shared access ROW serving two or more lots. These ROW are expected to be compliant with the CODC Addendum to NZS4404:2004<sup>4</sup> based on a right of way serving 2-4 dwelling units with the exception of longitudinal gradient which is to be compliant with the current NZ Standard NZS4404:2010 Land Development and Subdivision Infrastructure. This standard allows for slightly steeper gradients on a lane or private way serving up to 6 dwellings. A consent condition has been provided to allow the access ROW to be formed in compliance with the current NZ Standard with a further surfacing requirement to address winter conditions in Central Otago. I consider that the proposed consent condition, based on the CODC addendum to NZS4404:2004 with modified gradient to the current NZ Standard NZS4404:2010 and surfacing amended to accommodate winter conditions in Central Otago, is acceptable and appropriate within the local environment.
- 23 Vehicle crossing to individual lots, from the local road network or access ROW, are expected to be formed in accordance with CODC standards. I have suggested that some lots (Lots 3, 4, 5 & 10) will have restrictions on where their vehicle crossing cannot be formed, this is based on maintaining minimum separation distance from the nearest intersection, these restrictions can be achieved within the design. I consider that an appropriate and compliant vehicle crossing can be formed to each lot or shared ROW access.
- 24 Overall, with appropriate consent condition, I considered that the Proposal will not have any adverse transport effects on the safety or efficiency of the onsite roads and the adjacent transport network including the local pedestrian and cycling environment.

## **RESPONSE TO SUBMISSIONS**

- 25 Some submissions are opposed to the Application. A range of reasons are given for their opposition, some of which relate to traffic elements or potential traffic effects of the Proposal.

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<sup>4</sup> Refer CODC Addendum to NZS4404:2004, Table 3.1 Road Design Standards – Urban (speed limit ≤70km/hr).

- 26 The approach I have adopted in this statement of evidence is to identify those parts of submissions in opposition where I disagree with the submission and to explain my reasons for my disagreement.
- 27 A number of the Submission<sup>5</sup> have raised their concern that a cul-de-sac must only serve a maximum of 20 dwelling units based on the CODC Addendum to NZS4404:2004. This therefore also raised traffic flow and congestion concerns on Terrace Street and at the intersection with Bannockburn Road.
- 28 The CODC cul-de-sac<sup>6</sup> road type is an urban road with a single 3.5m traffic lane, formalised parking on one side only (2.5m), and would typically include kerb and channel and parking controls. This road type is expected in a higher density urban environment such as Cromwell. This road type would serve a recommended maximum of 20 residential dwelling units based on the CODC Addendum to NZS4404:2004. This limit is for design guidance and to limit traffic demand, it is not an assessment of a roads traffic capacity.
- 29 Within Terrace Street there is no identified, or observed, demand for onstreet car parking. This is primarily a result of the larger lots and lower density development expected in Bannockburn meaning the residents, and their guest/visitors may park within their lots rather than needing onstreet car parking. It is therefore possible to adapt this road type by removing the formalised parking and instead provide two opposing traffic lanes. This results in a significant traffic capacity increase allowing the adapted road type, with two opposing traffic lanes, to serve a significantly greater number of residential dwellings.
- 30 The existing Terrace Street formation, the extension of Terrace Street into the site (Lot 101) and the loop road (Lot 100), all have a formation more akin to a rural road with a traffic capacity significantly higher than the demand created by the current and proposed number of residential dwellings served. I note that this road formation can be observed on other Bannockburn streets such as Hall Road which also has a single separate footpath.

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<sup>5</sup> Refer Submissions 04 Olds at Page 7 [2.5], 06 James at page 4 [5], 08 Cameron at page 1, 09 Stretch at page 5 [6], 11 Dicey at page 2 [5], 13 Verboekt at page 3 [4], 15 Hughes at page 5 [3], 23 Perkins/Miller at page 2, 26 Wallace at page 1 [3], 28 Walmsley at page 2 & 3.

<sup>6</sup> Refer CODC Addendum to NZS4404:2004, Table 3.1 Road Design Standards – Urban (speed limit ≤70km/hr).

- 31 Terrace Street, the proposed onsite roads and other roads/streets in Bannockburn are formed as local roads with two opposing traffic lanes and open grassed swales. These are more akin to a rural road type within a peri-urban environment. This road type is more appropriate for lower density urban environments such as Bannockburn and have been chosen for this Proposal.
- 32 Terrace Street, with two opposing traffic lanes, will have sufficient capacity to accommodate both the current and traffic generated by the Proposal. I do agree with the Submitters that the traffic increase on Terrace Street will be noticeable; the Proposal will increase traffic on Terrace Street by approximately 100%, effectively doubling the current traffic flow. This is the primary reason for recommending that a single footpath is provided the full length of Terrace Street. The footpath will improve pedestrian safety as pedestrians will not be required to share the trafficked carriageway with vehicles.
- 33 However, with respect to congestion, I do not agree with the Submitters. The increased traffic will not result in congestion, the increased traffic will not have any noticeable effect on the overall efficiency or safety of Terrace Street, the intersection with Bannockburn Road or the greater road network.
- 34 My Transport Assessment considers the existing environment with the Proposal added, in this respect it includes the known development within Bannockburn. The assessment does not include cumulative<sup>7</sup> element as it is unknown what additional residential development may be enabled within undeveloped land and under Plan Change 19. The assessment includes known development, not possible or permitted development based on existing or potential zoning which includes the undeveloped portions of the Proposal (balance Lots). However, given the generally low traffic flows within Bannockburn I would expect the current road network, including Bannockburn Road to accommodate all permitted (zoned) development without leading to road safety or operational efficiency concerns which would be greater than minor. This would include areas with increased roadside activity and parking

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<sup>7</sup> Refer Submissions 13 Verboekt at page 3 [4], 23 Perkins/Miller at page 2, 30 Galvin at page 2.



such as the areas near to the café and hotel or intersections with Felton or Cairnmuir Roads.

- 35 Some Submitters have also raised concerns with street lighting<sup>8</sup>. I have recommended street lighting as this provides safety benefits when it is likely that pedestrians may share the carriageway. Street lighting is usually expected in an urban environment and the residential zoning. I note that I have considered the extent of street lighting based on the Bannockburn environment, as suggested, it would be appropriate to provide street lighting at intersections and footpath crossings. In other locations bollard lighting is provided to illuminate the footpaths and pedestrian areas within the road corridor.
- 36 There are a number of minor elements of the Proposal which have been raised by Submitters, this includes the upgrades to Terrace Street. For instance the provision of centreline markings and a second footpath<sup>9</sup>. I agree with these Submitters in that these elements are desirable, I do not regard them to be necessary. In this respect I consider the current Proposal to be adequate and acceptable.
- 37 I note that concern has also been raised with respect to parking within the proposed development<sup>10</sup>. I note that generally parking is not managed in Bannockburn. Any parking either associated with building/construction activities, visitor parking, or leisure parking at the reserves will be temporary in nature. With the extension of Terrace Street (Lot 101) there is the inclusion of some indented parking to accommodate these uses meaning the parking, within the carriageway will be less likely and unlikely to have any effect on safety or operational efficiency of the onsite road network.
- 38 The FENZ Submission (30) raises concerns with the ROW gradients and requests that the ROW have gradients which meet the CODC requirements of 1 in 6 (16%). It is noted that the preliminary design suggests that some ROW gradients will not meet this requirement. These ROW designs have been refined since my original transport assessment. However, to provide guidance

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<sup>8</sup> Refer Submissions 06 James at page 6 [h], 08 Cameron at page 1, 09 Stretch at page 5 [6], 11 Dicey at page 2 [7], 13 Verboekt at page 4 [5].

<sup>9</sup> Refer Submissions 26 Wallace at page 1 [3], 28 Walmsley at page 2 & 3.

<sup>10</sup> Refer Submission 15 Hughes at page 5 [3].

through the engineering approvals process I recommend that ROW design utilises the current NZ Standard NZS4404:2010, which allows for a slightly steeper gradient than the CODC requirements. In this respect my recommended consent condition suggests specific surfacing to improve vehicle grip/traction during the Central Otago winter conditions. I consider that it is acceptable to consider the current NZ Standard as an appropriate design guide. I understand that the maximum ROW gradients can comply with my recommended consent condition.

## **RESPONSE TO OFFICER REPORT**

- 39 The Officer Report recommends acceptance of the Application. A range of reasons are given for their recommendation, some of which relate to my area of expertise.
- 40 I have reviewed the transportation elements of the Officer Report (Paragraphs 133 to 141). The Officer Report, with comment from the Council's consultant engineer, generally agrees and adopts the findings from my Transport Assessment. In particular it confirms the road type, adapted from the Council's cul-de-sac road type, is appropriate for Terrace Street, the onsite extension of Terrace Street (Lot 101) and the loop road (Lot 100) which is in keeping with the rural-urban characteristic of Bannockburn.
- 41 At paragraph 139 the Officer Report acknowledges the increased gradient of some of shared ROW, in this instance it is noted that gradients, over 20% are generally not supported by CODC engineering. However, and decision has been withheld suggesting approval would be considered at the Engineering Acceptance/Approval stage. I consider that this introduces a risk to Council and the Applicant should a later agreement not be found. I therefore suggest that the consent condition provides appropriate guidance. As mentioned above, I suggest that the consent condition based on a modified requirement from the current NZ Standard NZS4404:2010 and suggested in my transport assessment. This consent condition can be achieved whilst the design of the ROW may still be refined and improved during the Engineering Acceptance/Approval stage.
- 42 I accept the findings of the Officer report with respect to street lighting. As I have mentioned above, I suggest that street lighting is provided at

intersections and footpath crossings, in other locations bollard lighting is provided to illuminate the footpaths and pedestrian areas within the road corridor. I note that this is reliant on finding an acceptable bollard type lighting which can be vested with Council. I suggest that this is reflected in the consent conditions.

### **CONCLUSION**

43 Overall, with appropriate consent conditions, it is considered that the proposed subdivision will not have any adverse transport effects on the safety or efficiency of the adjacent transport network including the local pedestrian and cycling environment.

44 Thank you for the opportunity to present my evidence.



Jason Bartlett  
27 September 2024