

**BEFORE THE HEARINGS PANEL
FOR THE PROPOSED QUEENSTOWN LAKES DISTRICT PLAN**

IN THE MATTER of the Resource
Management Act 1991

AND

IN THE MATTER of re-notified Stage 1
submissions: Gertrude's
Saddlery Limited and
Larchmont
Developments Limited
at Arthurs Point

**STATEMENT OF EVIDENCE OF MICHAEL ANDREW SMITH
ON BEHALF OF QUEENSTOWN LAKES DISTRICT COUNCIL**

TRANSPORT

18 October 2022

 **Simpson Grierson**
Barristers & Solicitors

S J Scott / R Mortiaux
Telephone: +64-3-968 4018
Facsimile: +64-3-379 5023
Email: sarah.scott@simpsongrierson.com
PO Box 874
SOLICITORS
CHRISTCHURCH 8140

TABLE OF CONTENTS

1. INTRODUCTION..... 2

2. SCOPE..... 3

3. EXECUTIVE SUMMARY 4

4. GENERAL DESCRIPTION OF THE REZONING SITES.....5

**5. POTENTIAL TRANSPORT EFFECTS OF PROPOSED REZONING: EDITH
CAVELL BRIDGE..... 7**

6. CONNECTION TO ARTHURS POINT ROAD 9

7. DEVELOPMENT AREA ACCESS ROAD (ATLEY ROAD) 13

1. INTRODUCTION

- 1.1 My full name is Michael Andrew Smith. I hold the position of Senior Principal Transportation Engineer and Australasia Road Safety Practice Lead, at Stantec, who I have been with since 1996.
- 1.2 I have a Masters of Engineering in Transport (MET) from the University of Canterbury. I am a Fellow of Engineering New Zealand (FEngNZ / CPEng), and a Registered Professional Engineer Queensland (RPEQ).
- 1.3 I have over 25 years' experience in traffic engineering, and regularly undertake assessments of resource consent applications for transport matters for various local authorities across NZ.
- 1.4 I have experience in road safety, traffic engineering, construction and assessing development applications from a traffic compliance and impact perspective. I have assessed numerous development applications in the Queenstown Lakes district. I have also prepared evidence, at council hearing stage, for the Queenstown Lakes District Council (**Council** or **QLDC**) in relation to Stage 3 of the Proposed District Plan (**PDP**).
- 1.5 Although this is a Council hearing, I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.
- 1.6 The key documents I have used, or referred to, in forming my view while preparing this brief of evidence are:
- (a) Evidence in chief, rebuttal and reply evidence of Ms Wendy Banks, on behalf of QLDC dated 27 May 2017, 7 July 2017 and 6 October 2017 respectively;

- (b) Section 42A report, rebuttal and reply evidence of Ms Rosalind Devlin on behalf of QLDC, dated 24 May 2017, 7 July 2017 and 6 October 2017 respectively;
- (c) Evidence of Mr Jason Bartlett, on behalf of Gertrude's Saddlery dated 9 June 2017;
- (d) Evidence of Mr Andy Carr, on behalf of Gertrude's Saddlery and Larchmont dated 9 August 2017;
- (e) Queenstown Lakes District Council Independent Hearing Report 17.4 – Mapping of Arthurs Point;
- (f) Arthurs Point Crossing, Single Stage Business Case (Waka Kotahi, QLDC, Way to Go) dated 21 December 2020;¹
- (g) Arthurs Point Crossing Single Stage Business Case, on behalf of QLDC dated 11 March 2021;
- (h) Atley Road subdivision Proposed Structure Plan, dated 4 October 2022; and
- (i) Arthurs Point Crossing of the Shotover River, Memorandum Regarding Cumulative Landscape Effects (vivan+espie), 1 July 2021.

2. SCOPE

- 2.1 My evidence addresses the potential transport related effects of the proposed rezoning sought by Gertrude's Saddlery Ltd (#494) and Larchmont Developments Ltd (#527), being the rezoning of Part Section 1 SO 24074, Lots 1-2 DP 307630 and Lot 2 DP 398656, Arthurs Point from Rural Zone to Lower Density Suburban Residential (**LDSR**).
- 2.2 The scope of my evidence is in relation to the receiving transport environment that will most notably be impacted by the proposed rezoning. My evidence focuses on the potential traffic effects of the rezoning, and in particular, the impact of the anticipated development on the operation of the Edith Cavell Bridge, access from the site to Arthurs Point Road, and on existing intersections.
- 2.3 For clarity, my assessment has assumed, that there will be no access to the site from Mathias Terrace.

¹ [2a-arthurs-point-crossing-ssbc-final-draft-20201221-cc.pdf \(qldc.govt.nz\)](#)

2.4 I understand the relief sought by the submitters would allow for 89 lots to be developed. My preliminary work and assessment and drafting of this evidence was primarily completed based on this relief.

2.5 On Friday 14 October 2022, the submitters filed a memorandum confirming that a refined rezoning request (through an associated structure plan) consisting of:

- (a) LDR: 0.79ha
- (b) Large Lot Residential (B) Zone (LLR B): 5.02ha.

2.6 I understand this would amount to a maximum of 30 lots.

3. EXECUTIVE SUMMARY

3.1 The key conclusions in my evidence are that:

- (a) In considering the material presented on the transport effects on the Edith Cavell Bridge, and in assessing the Single Stage Business Case (SSBC) undertaken by Council, I do not oppose the rezoning sought on the basis of capacity and traffic effects at the Edith Cavell Bridge.
- (b) I do however oppose the rezoning sought on the basis that:
 - (i) The submitters have failed to undertake a robust assessment of the effects of additional traffic on the performance of the Atley Road / Arthurs Point Road intersection, including the queue formation affecting the Atley Road / Amber Close roundabout; and
 - (ii) The submitters have failed to demonstrate that the access road formation, as detailed in the evidence filed in the Stage 1 hearing could be formed to the standards stated.

4. GENERAL DESCRIPTION OF THE REZONING SITES

- 4.1 The submission site is located alongside the Shotover River, adjacent to an area of low density dwellings. The location is detailed in Figure 4-1 below.



Figure 4-1: General Location of rezoning site

- 4.2 A key link to the Arthurs Point area is characterised by movement over a historic single lane bridge, the Edith Cavell Bridge. The bridge is located approximately 600 metres southwest of the Arthurs Point Road / Atley Road intersection. Arthurs Point Road undertakes a series of reverse curves in its descent from Atley Road down to the bridge.

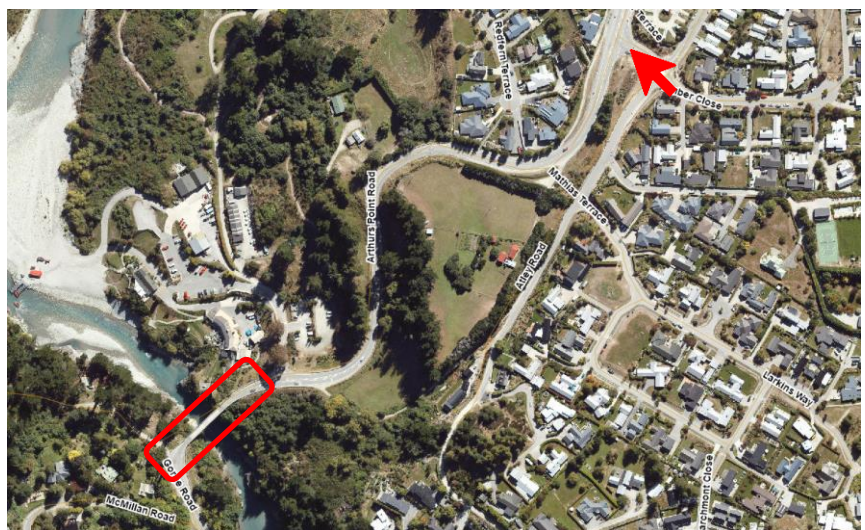


Figure 4-2: Arthurs Point, Edith Cavell Bridge. Atley Road intersection arrowed.

- 4.3** Access to the QLDC road network from the site, is currently via Atley Road, through the Atley Road / Mathias Road / Amber Close roundabout, and forming a Tee-road junction with Arthurs Point Road (refer to Figure 4-3 below).

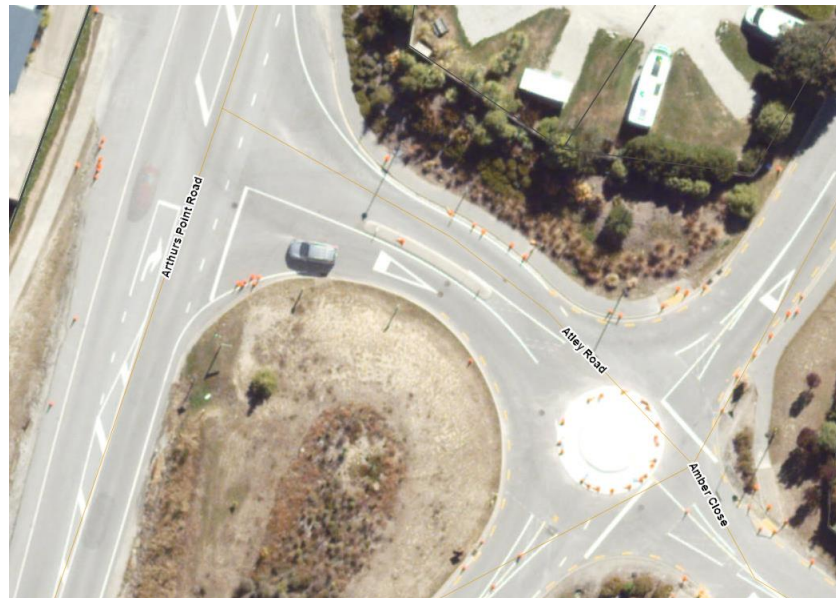


Figure 4-3: Existing General arrangement of the Atley Road / Arthurs Point Road intersection

- 4.4** Mathias Terrace junctions with Atley Road approximately 130 metres southwest of the Atley Road / Amber Close roundabout. Mathias Terrace forms a loop road cul-de-sac, with entry and exit via the Atley Road junction.
- 4.5** Access to the site is currently formed by a gravel single lane, with steep cuttings above, and steep downslope angles of varying heights (Figures 4-3 and 4-4).



Figure 4-4: Existing Atley Road lane formation



Figure 4-5: Existing Atley Road lane formation

5. POTENTIAL TRANSPORT EFFECTS OF PROPOSED REZONING: EDITH CAVELL BRIDGE

- 5.1 Mr Bartlett, at paragraph 15 – 27 of his 2017 evidence, sets out the significant limitations of the Edith Cavell Bridge, with respect to traffic flow and delay.²
- 5.2 I agree with these limitations, and more particularly that the traffic effects at the Edith Cavell Bridge are a result of cumulative development in the area.³ In this regard, I consider that there may be no one single development that creates the tipping point in terms of flow and delay on the Edith Cavell Bridge.
- 5.3 As explained in the 2017 evidence of Mr Bartlett,⁴ the use of priority control (demand driven) traffic signals may work in the short term but would rapidly approach their capacity limits. I note that Mr Bartlett's analysis identifies that at the current growth rate, the bridge would start to fail with regard to traffic capacity in about 2030.
- 5.4 Between 2017 and present I have undertaken the assessment of transport matters for multiple developments in and around the Arthurs Pointy area. This level of development for the greater Arthurs Point area may accelerate the time to failure. At the time of Mr Bartlett preparing his original evidence, the transport models would not have incorporated the effects of any land use changes / developments approved for the Arthurs Point area.

² Bartlett, 9 June 2017, Para 17 – 25

³ Report and recommendations of Independent Commissioners, Page 14, Para 65

⁴ Bartlett, 9 June 2017, Para 24

5.5 I am of the opinion that the continued development of the Arthurs Point area, together with this proposed rezoning, would result in a continued cumulative increase in traffic effects at the Edith Cavell Bridge.

5.6 I acknowledge that QLDC has undertaken a Single Stage Business Case⁵ (SSBC) for the development of a new bridge, including consideration of an alternate pedestrian / cycle facility. This is being progressed, and I understand this is being progressed. At the time of writing this evidence I did not have any certainty around the completion date.

5.7 For clarity, I am aware, through a review of the SSBC documentation, that there are multiple options for the location of a new bridge over the river, all of which has some level of effect on the proposed access to the site. I detail the scheme level figure from the SSBC documentation below:



5.8 The development of an alternate bridge with suitable capacity will reduce the current traffic effects on the Edith Cavell Bridge, however the community will experience progressive increases in capacity reduction and delay until such time as a new alternate bridge is built.

5.9 I understand that funding to progress the improved crossing at Arthurs Point is currently included in Years 9-10 of the Council's 2021-31 Ten Year Plan.

5.10 In considering all of these matters, I have no reason to oppose the rezoning sought on the basis of capacity and traffic effects at the Edith Cavell Bridge.

6. CONNECTION TO ARTHURS POINT ROAD

Intersection Performance Assessment

6.1 Mr Bartlett has presented⁶ a case in his 2017 evidence that the Atley Road / Arthurs Point Road intersection would perform satisfactorily, based upon a similar analysis of the Bullendale Drive / Atley Road intersection located at 154 Arthurs Point Road. In reviewing this position, I cannot identify any supporting evidence that the Atley Road intersection carries similar traffic volumes from the submission site, and that the intersection form, including all roads leading to the intersection, are of a similar nature and layout.

6.2 I completed a site visit on 11 October 2022 for the purpose of understanding the current road network, and the implications of the proposed rezoning.

6.3 In undertaking the site visit, I found that the traffic generation areas between the proposed access via Atley Road, and that of Bullendale Drive are significantly different.

6.4 The Bullendale Drive catchment area (refer **Figure 6-1** below) comprises approximately 55 individual dwelling units, comprising multiple attached units.

⁶ Bartlett, 9 June 2017, Para 26 – 28



Figure 6-1: Existing Bullendale Drive catchment area - dwellings

- 6.5 The Atley Road catchment area (refer **Figure 6-2** below) currently comprises in excess of 170 dwelling units within the current developed area.
- 6.6 This highlights that the existing number of dwellings within the Atley Road catchment area is nearly 4 times that of the Bullendale Drive catchment area. I am of the opinion that Mr Bartlett's reliance on the assessment of the Bullendale Drive intersection performance is flawed and is not applicable to this assessment.
- 6.7 I am of the opinion that the reliance on an assessment undertake for a development area that does not match the size and layout of the current application is incorrect, and could lead to a false conclusion.



Figure 6-2: Existing Atley Drive catchment area – dwellings. Atley Road / Arthurs Point Road intersection arrowed.

Intersection Design

- 6.8 Given the reduced speeds now present on Arthurs Point Road (being 50 kmh), the presence of the flush median, and the fact that the Atley / Arthurs Point Road intersection is a simple Tee, I consider that in its simplest form a Tee-junction junction type would generally be suitable from a capacity perspective.

- 6.9** In reviewing the location of the referenced Bullendale Drive catchment area and intersection form, I note that a key differentiation between the two intersection layouts is that the Atley Road intersection is characterised as having a second intersection control (roundabout) located some 35 metres in from the limit line of the Arthurs Point Road intersection, as indicated in Figure 6-3 below.



Figure 6-3: Atley Road / Arthurs Point Road Intersection Layout

- 6.10** Considering the current traffic movement onto Arthurs Point Road, and the performance of the intersection, I consider that there is insufficient robust analysis to determine if the intersection can operate at an appropriate level of service and safety, in the event the rezoning is granted.
- 6.11** Considering the roundabout (Atley / Amber Close; Refer to Figure 6-2 above), I remain concerned that queue back may occur from the Arthurs Point intersection. This could have negative effects on the capacity of the roundabout at am and pm peak. I am of the opinion that the analysis of the intersection is critical to the determination of the traffic effects that could potentially arise as a result of the proposed rezoning.
- 6.12** I consider the necessary assessment for the rezoning is to undertake a suitable intersection analysis utilising tools such as a SIDRA© model, inclusive of all current and proposed development areas to ensure that the intersection form and function is fit for purpose.

7. DEVELOPMENT AREA ACCESS ROAD (ATLEY ROAD)

- 7.1 I have looked at the proposal for access to the site, and the expected traffic generation, initially for the 87 Lots proposed, then revised back to 30 Lots, as presented in the latest refinement of relief.
- 7.2 In reviewing the QLDC GIS website, I note that access to the site is to be gained through a new road over 111 Atley Road. For the purpose of this assessment, I have assumed that this road will be formed and vested to Council, enabling the conveyance of utilities, and to provide suitable access for matters such as refuse collection. I proceed with my assessment on this basis.
- 7.3 In relation to the necessary width of Atley Road, I understand from previous evidence (Bartlett⁷ / Carr⁸), and comments from the Hearings Panel⁹ that the section of narrow lane width is that located in Figure 7-1 below (marked in red).

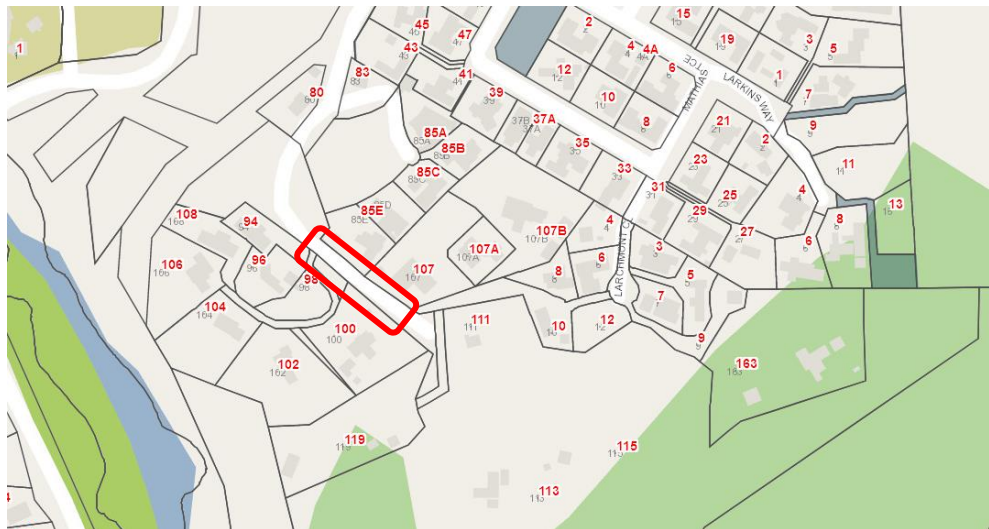


Figure 7-1: Access Road Location (Source QLDC GIS)

- 7.4 I agree with the Bartlett / Carr evidence that there will be sub-standard widths, albeit that this is not clear when considering current widths, agreements to purchase land to widen, and the final outcome.

7 Bartlett, 7 June 2017, Para 32

8 Carr, 9 August 2017, Para 32 - 47

9 Report and recommendations of Independent Commissioners, Page 14, Para 53, 64

7.5 I am aware of the land parcel changes proposed under RM170551 (as detailed below), and the additional width that this creates for the constricted section detailed above. This will result in a corridor width of 9.5 metres.

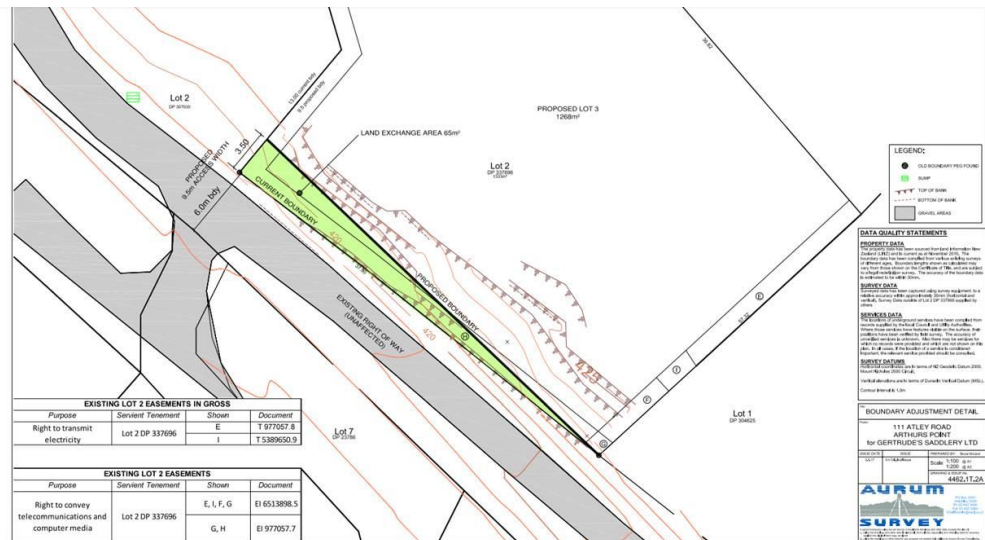


Figure 7-2: Land Parcel Exchange Area (RM170551)

7.6 In reviewing the proposed lot yield for the Land Use Change (30 Lots), I note that the total number of lots that will be serviced by the proposed corridor will remain of the same evaluation criteria, being Suburban: Live and Play, 1 to 200 domestic units.¹⁰ This does not change the original assessment.

7.7 While all this is detailed in reports, there is no clear diagrammatic evidence of what the submitters propose with regard to the road formation, and the effects of the proposed new road formation and footpaths would have on the existing access, and adjacent properties, both upslope and downslope.

7.8 The site inspection revealed that the existing lane is formed as a gravel lane, with steep up-slopes and down-slopes either side. The carriageway formation is typically 3m in width, with no passing opportunities (refer to Figures 7-6 and 7-7).

¹⁰ QLDC Land Development and Subdivision Code of Practice, Table 3.2



Figure 7-3: Downslope – opposite drive to 94 - 106

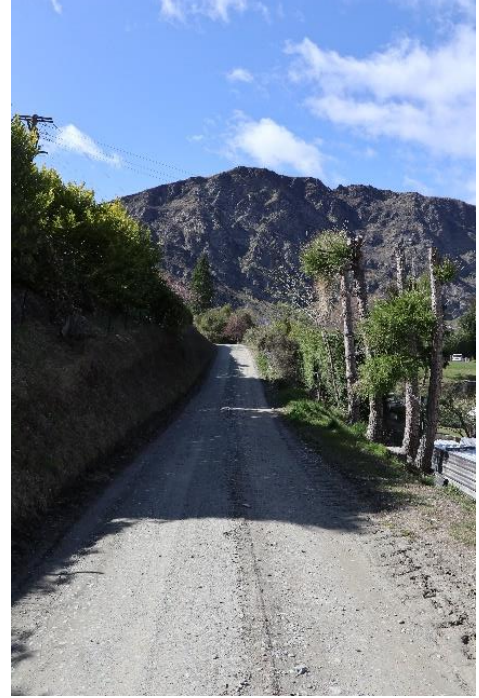


Figure 7-4: Upslope – opposite drive to 94 - 106

- 7.9** The road width at the gate to #98 Atley Road is 3 metres, with a steep upslope cut (>2.5m) and downslope on the outer edge. If this section was to be widened to accommodate the proposed rezoning, there would be significant earthworks, with potential impacts on the adjacent properties. The downslope fill would be possible but would be of height that would require safety barrier protection, to prevent an errant vehicle penetrating into dwellings below the road level.
- 7.10** Widening of the access road for the development would have negative effects on the driveway access to #94 – 108. The driveway would be required to be steepened and would almost certainly not meet QLDC requirements for change of grade.
- 7.11** From observations on site, I am especially concerned about the narrow road section through the tight curve in the alignment. The location of the curve as detailed in Figure 7-3 and Figure 7-4 above reveals that the upslope height exceeds 10 metres and would require extensive cut to widen the road formation.



Figure 7-5: Narrow entry into the curve on Atley lane section (southbound). Note poor intervisibility due to cutting either side.



Figure 7-6: : Narrow entry into the curve on Atley lane section (westbound). Note poor intervisibility due to cutting either side

7.12 It is accepted that from an engineering perspective, significant cuts could be undertaken, and acknowledge that the costs could be very high to ensure that a suitable retaining wall / batter is formed. Fill on the downslope similarly could be formed, however there is no assessment of the impacts that this would have on the adjacent properties below the existing road formation.

7.13 Of significance is the road width alongside #44 and #80 Atley Road. Both of these properties have a steep downslope grade that exists and would require significant retaining walls and safety barrier protection for errant vehicles. Number 80 Atley Road is characterised by the dwelling being some 3 metres from the boundary, with the boundary line crossing the existing driveway formation. Any significant retaining wall development to meet the stated road formation widths. Given the proximity to the dwelling, and the risk of an errant vehicle penetrating into the roof of the dwelling below.



Figure 7-7: Aerial view of #80 Atley Road with property boundary.
Source QLDC GIS property

- 7.14** The submitters (and their 2017 evidence) lack any detail on how, and if a road formation could be formed. I am of the opinion that this is a critical element for assessment, as the land use change assessment by the applicant already contains elements of the road formation that are below QLDC Code of Practice standard requirements.
- 7.15** I have significant concerns that a non-compliant design, or a lack of suitable safety barrier provisions could result in significant risks to the residential dwellings below the road formation.
- 7.16** For the reasons stated above I do not support the proposed rezoning on the grounds that there is no demonstratable evidence that the stated road formation could be reasonably formed to the QLDC Subdivision Code of Practice standards proposed by the applicant, considering the limitations in road width stated by the applicant. It has been proposed by the applicant that while the overall road corridor is less than that required for the road, the remaining elements of carriageway width and foot path width could be formed. Based upon my site observations,

and the significant works required to achieve the stated standards, I do not concur with this assessment.



Michael Smith

18 October 2022