

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

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER OF Stages 3 of the Proposed District Plan

**STATEMENT OF EVIDENCE OF SCOTT SNEDDON EDGAR  
ON BEHALF OF THE FOLLOWING SUBMITTER:**

**SOUTHERN VENTURES PROPERTY LIMITED (SUBMITTER #3190)**

**29<sup>th</sup> May 2020**



## **Introduction**

- 1 My name is Scott Sneddon Edgar. I am a Resource Management Planner and hold a Bachelor of Arts Degree (Honours) in Town and Country Planning from Strathclyde University in Glasgow, Scotland. I am an Associate Member of the New Zealand Planning Institute.
- 2 I am an independent planning consultant based in Wanaka. Prior to my current position I was employed by Southern Land Limited, a Wanaka based survey and planning consultancy, from October 2006 to November 2018. During my time at Southern Land I was involved principally with the preparation of resource consent applications and the presentation of planning evidence at Council hearings. I was also involved in the preparation of submissions and further submissions on Stage 1 of the Proposed District Plan, participation in the Stage 1 hearings and subsequent appeals and Environment Court proceedings.
- 3 Prior to relocating to New Zealand in 2005 I worked as a development control planner with various Scottish local authorities in both rural and urban regions.
- 4 Upon my arrival in New Zealand I was employed as a resource consents planner in the Wanaka office of Civic Corporation Limited before taking up a position with Southern Land Limited. I have a total of 20 years' planning experience, 14 of which have been gained in New Zealand.

## **Code of Conduct**

- 5 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court of New Zealand Practice Note 2014 and I agree to comply with it. In that regard I confirm that this evidence is written within my expertise, except where I state that I am relying on the evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

## **Executive Summary**

- 6 In this evidence I conclude that:
  - The proposed Lower Density Suburban Residential Zoning and associated realignment of the Urban Growth Boundary and Landscape Classification Line is appropriate;

- That the parts of the site that the submission seeks to be rezoned can be appropriately serviced and that natural hazards and potential contamination can be suitably managed;
- That the relief sought will assist in giving effect to the NPS-UDC through the provision of greenfield development opportunities within an area of the urban environment that would otherwise be reliant on ad hoc and incremental infill development to provide for growth and availability of residential land;
- That overall the relief sought by Southern Ventures Property Limited meets the purpose of the Act and gives effect to the relevant Regional Policy Statement (PORPS 19) and the higher order provisions of the Proposed District Plan.

### **Scope of Evidence**

- 7 I have been engaged by Southern Ventures Property Limited (S3190)(**Southern Ventures**) to provide expert planning evidence relating to their submission seeking the partial rezoning of the submission site to Lower Density Suburban Residential Zone (or Township / Settlement Zone if Council’s proposed rezoning of Albert Town as Lower Density Suburban Residential is rejected) and the associated realignment of the Urban Growth Boundary and Landscape Classification Line.
- 8 The submission included an initial landfill assessment prepared by e3 Environmental Ltd, a flood hazard assessment prepared by GeoSolve Ltd and a s32 assessment prepared by myself. The submission also included an earthworks plan and proposed zone plan. In addressing this submission I have relied on and been assisted by this information. In addition I have been assisted by the evidence of Ms Greaves addressing infrastructure matters.
- 9 In preparing this evidence I have read Ms. Devlin’s s42A report, the associated s32 Evaluation Report and Council’s expert evidence relating to strategic, geotechnical and infrastructure matters<sup>1</sup> as they relate to the Southern Ventures submission. I have considered the facts, opinions and analysis therein when forming my opinions set out in this evidence.
- 10 My brief of evidence is set out as follows:
- Site & Background

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<sup>1</sup> Prepared by Mr. Barr, Mr. Bond and Mr. Powell respectively.

- Submission
- Statutory Framework
- s42A Report
- Part 2 Assessment
- Conclusion

### **Site & Background**

11 The site and background to the submission is described in detail at paragraphs 1.3 to 1.16 of the s32 report attached as Appendix F to Southern Ventures Original Submission. For the sake of brevity I will not repeat that description in full but instead adopt it and summarise it below:

- The submission site lies immediately adjacent to the southern edge of Albert Town at Templeton Street and comprises Lot 1 DP 27171 and a strip of Crown Land Esplanade Reserve with a combined area of 9.7 hectares.
- Lot 1 DP 27171 and the Esplanade Reserve are respectively zoned Rural Lifestyle and Rural General / Rural under the Operative and Proposed District Plans.
- With the exception of the land immediately adjoining the northern boundary of the site and its north western corner the site is low lying and is identified as being subject to flood hazards, being within the flood plain of the Cardrona River which lies immediately to the south of the site.
- Historic landfill activities have been undertaken in the north western corner of the site.
- An inactive wastewater outfall main crosses through the middle of the site, running west to east.
- The southern half of the site has been identified as being within a wāhi tūpuna area as part of Stage 3 of the Proposed District Plan.
- The submitter has negotiated, in principle, a land swap with the Department of Conservation whereby the Crown Land Esplanade Reserve will be relocated to the southern boundary of the site to better fulfil its intended purpose (i.e. providing public access to the Cardrona River) and freeing up developable land at the northern end of the site.

## Submission

- 12 The submission of Southern Ventures supports the rezoning of the Albert Town Township Zone as Lower Density Suburban Residential but opposes the extents of the rezoning as it provides for limited greenfield development opportunities.
- 13 Council's s32 Assessment outlined the location of the Urban Growth Boundary (UGB) in relation to the existing Township Zones at Albert Town and Lake Hāwea was considered including an option (**Option 4**) of retaining the existing minimum lot size together with the provision for increased development capacity through the expansion of the UGB and associated urban zoning. The preferred option (**Option 3**) instead was to retain the UGB in its current location and upzone the Township Zones of Albert Town and Lake Hāwea to enable infill development. PDP Stage 3 therefore raises as an issue the location of the UGB and additional urban zoning. Southern Ventures seeks to extend those boundaries to include its land. The submission is therefore directly related to the plan change which seeks to zone Albert Town as Lower Density Suburban Residential Zone.
- 14 The benefits of Option 4 were acknowledged as including the provision for greenfield development opportunities within the UGB. The costs of Option 3 were identified as infill development being restricted by existing land covenants and individual site layouts and that infill development would occur incrementally. This is an issue that is directly relevant to giving effect to the NPS-UDC as the Council must be able to make provision for available zoning in the short/medium term. Incremental two-lot subdivisions of land do not provide for that and is dependent on landowners choosing to take that course of action.
- 15 A combination of Options 3 and 4 (i.e. upzoning to enable infill development and extension of the UGB to provide for greenfield development opportunities) has not been considered as its own option despite the potential for a combined approach to capitalise on some of the benefits of each approach while avoiding some of the identified costs. That is what Southern Ventures seeks to achieve through its submission.
- 16 Southern Ventures therefore seek the rezoning of the northern third of the site as Lower Density Suburban Residential (or any alternative zoning that is applied to the current Albert Town Township) in accordance with the proposed zone map attached as Appendix G to the submission and the realignment of the urban growth boundary and the landscape classification line to reflect the proposed LDSR zoning.

- 17 The remainder of the site would remain as Rural Lifestyle with, if necessary, a no build overlay to restrict development of the parts of the site where the flood hazard is harder to mitigate without exacerbating flood hazard risks on upstream properties.

### **Statutory Framework**

- 18 The relevant statutory framework is set out in parts 2 and 3 of the s32 Report and can be summarised as follows:

#### The National Policy Statement on Urban Development Capacity (NPS-UDC)

- 19 The NPS-UDC came into effect on 1 December 2016 and must be given effect to through the Proposed District Plan.
- 20 The NPS-UDC seeks to ensure that planning decisions result in effective and efficient urban environments that enable people, communities and future generations to provide for their wellbeing, provide opportunities to meet demand for housing and business land and provide choices in terms of dwelling type and location. The NPS directs Councils to provide in their plans enough development capacity to ensure that demand can be met and to ensure that the development capacity provided in plans is supported by infrastructure.
- 21 Mr Barr sets out in his strategic overview evidence<sup>2</sup> Council's approach to giving effect to the NPS-UDC and the extents of the urban environment within the District. Mr Barr advises that in the Wanaka context Council has, in its capacity assessment, defined the urban environment as including Wanaka, Albert Town, Luggate and the Lake Hawea Township while excluding the Rural, Rural Residential and Rural Lifestyle zoned land surrounding these urban areas. That assumption appears to be on the basis that sufficient land supply can be made through "infill development".
- 22 The Southern Ventures submission site immediately adjoins, and would become part of, the urban environment as defined in the NPS-UDC and I consider that the proposed rezoning of parts of the submission site as Lower Density Suburban Residential will assist in giving effect to the NPS-UDC through the provision of additional greenfield capacity that, as set out in the evidence of Ms Greaves and confirmed by Council, is adequately supported by existing infrastructure. The additional zoning will also enable Council to provide far greater lots, in a shorter amount of time, than compared with infill development.

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<sup>2</sup> Paragraphs 6.5 to 6.13

23 I consider that the proposed rezoning will provide feasible greenfield development capacity in part of the urban environment that would otherwise be largely limited to infill development that may be constrained by the position of existing dwellings and/or no further subdivision covenants. Infill development typically suffers a scale constraint, in that it relies on multiple owners to make individual development decisions without access to economies of scale that greenfields developers typically rely on for acceptable margins. In those respects, the site is more readily able to contribute to the supply of development capacity than infill development is likely to be able to achieve in the short to medium term. The rezoning as proposed is consistent with the NPS-UDC.

Partially Operative Regional Policy Statement (PORPS 19)

24 The Otago Regional Council's Proposed Regional Policy Statement 2015 was made partially operative on 14 January 2019 and is therefore referred to as the PORPS 19. The status and relevant provisions of the Regional Policy Statements is set out in the evidence of Mr. Barr<sup>3</sup>. I adopt Mr. Barr's evidence in this regard. Given that the appeals on the PORPS 19 are now largely settled the PORPS 98 is of limited relevance and the relevant provisions of the PORPS 19 can be summarised as follows (including provisions addressed in recent consent orders).

25 Objectives 1.1 and 1.2 of the PORPS 19 and their associated policies promote the sustainable use of resources to provide for the economic, social and cultural wellbeing of the region's people and communities and the recognition and provision for integrated management of natural and physical resources.

26 Objectives 2.1 and 2.2 and their associated policies direct that the principles of the Treaty of Waitangi are taken into account in resource management processes and decision making and that Kāi Tahu values, interests and resource are recognised and provided for, including through the protection of wāhi tūpuna.

27 Objective 3.1 seeks to recognise and maintain or enhance (where degraded) the values of ecosystems and natural resources. Policy 3.1.13 relates to environmental enhancement and seeks to encourage, facilitate and support activities that contribute to the resilience and enhancement of the natural environment including through the mitigation of natural hazards and the improvement of access to rivers. Further, Objective 3.2 and Policy 3.2.6 seek

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<sup>3</sup> Paragraphs 6.29 to 6.41 of Strategic Overview for all of Stage 3 Evidence

to identify and protect or enhance Otago's significant and highly valued natural resources which I understand to include Rural Character Landscapes.

- 28 Objectives 4.1 and 4.5 and their associated policies seek to minimise risk from natural hazards, ensure that urban growth and development is undertaken in a strategic and coordinated manner and is well designed and integrates well with adjoining urban and rural environments. In addition Objective 4.6 and its associated policies seek to ensure that contaminated land and waste materials do not harm human health.
- 29 Objectives 5.1 and its associated policy seeks to maintain or enhance public access to areas of value to the community.
- 30 The thrust of the PRORPS19 policy framework is to achieve urban growth through the planned expansion of existing urban edges where that can be achieved consistent with other policy outcomes for the natural environment (e.g. rivers), infrastructure, and natural hazards. The submission site being adjacent to existing development and being easily serviced by three waters infrastructure is of planned expansion that can provide for greater land supply while be consistent with policy outcomes for the natural environment. I therefore consider that the proposed rezoning is consistent with the PORPS 19.

#### Proposed District Plan

- 31 As set out in the s32 Report appended to the submission the higher order provisions of the Proposed District Plan, contained in Chapter 3 - Strategic Direction, Chapter 4 - Urban Development, Chapter 5 - Tangata Whenua and Chapter 6 - Landscapes and Rural Character, among other things seek to:
- manage urban growth in a strategic and integrated manner through the promotion of compact and well designed urban forms that build on historical settlement patterns, creates desirable, healthy and safe places to live and minimises natural hazard risks;
  - protect the District's landscapes from sporadic and sprawling development;
  - manage subdivision and development that may result in adverse effects on the natural character and conservation values of the District's lakes and rivers;
  - apply urban growth boundaries (**UGB**) to include sufficient land to meet demand and ensure the ongoing availability of a competitive land supply through the enablement of urban development within those boundaries;

- avoid impinging on ONLs and ONFs when defining UGBs and minimise degradation of open rural landscapes; and
- ensure that land within UGBs is serviced in a coordinated and efficient manner.

### **Section 42A Report**

32 Ms. Devlin's s42A report addresses the Southern Ventures submission at section 20<sup>4</sup>. Ms. Devlin addresses a number of matters in relation to the submission and proposed rezoning including natural hazards, landfill and infrastructure. Overall Ms. Devlin concludes that the relief sought, being the rezoning of part of the site to LDSR and the realignment of the UGB and Landscape Classification Line, is rejected largely due to the lack of sufficient information relating to servicing. I will address the matters raised in Ms. Devlin's s42A report as follows:

#### Natural Hazards

33 The flood hazard assessment, prepared by Mr. Stocker of GeoSolve, and included as Appendix D to the submission has been reviewed by Mr. Bond in his evidence on geotechnical matters and he confirms that the submission site is identified as being subject to liquefaction and flood hazard.

34 Mr. Bond considers that liquefaction does not pose a significant risk to the future development of the land to be rezoned and that liquefaction can be appropriately addressed and mitigated through the mitigation works that are proposed to resolve the flood hazard and also through detailed foundation design if necessary. It is not uncommon for liquefaction risks to be assessed and mitigated at subdivision stage and/or at such time as buildings are proposed and I note that the 'Possibly Moderate' liquefaction classification applies to the whole of Albert Town. I adopt Mr. Bond's opinions on this matter and consider that the liquefaction hazard can be appropriately mitigated at the time the submission site is developed and that the proposed rezoning will not create unreasonable expectations with regard to the management of natural hazards.

35 Mr. Bond agrees with the findings of the flood hazard assessment that the flood hazard can be appropriately mitigated by raising the existing ground level to ensure that floor levels are elevated above historic flood levels and by applying setbacks from the Cardrona River. These setbacks are reflected in the extent of the proposed rezoning. I adopt the opinions of Mr.

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<sup>4</sup> Paragraphs 20.1 to 20.18 on pages 55 to 62 of the s42A Report on Settlement and Lower Density Suburban Residential Zones - Mapping

Bond and Mr. Stocker in this regard and consider that flood hazards within the submission site can be appropriately mitigated.

36 While Ms. Devlin also adopts Mr. Bond's expert evidence with regard to natural hazards she expresses some concern with regard to the potential for permitted residential development to progress prior to the mitigatory works being undertaken. To address this scenario Ms. Devlin sets out<sup>5</sup> a site specific rule to be included as part of Chapter 7 along with the associated earthworks plan (attached as Appendix E to the submission). I agree with Ms. Devlin that the recommended provision would adequately avoid the construction of buildings prior to the flood mitigation works being undertaken. That being said I do not consider the site specific rule is necessary to achieve the outcome sought on the basis that other legislation can be relied upon to ensure that those mitigation works are done, specifically Section 71 of the Building Act 2004 which prohibits a building consent authority from granting building consent for a building unless specific natural hazard mitigation works are carried out. Therefore, in terms of streamlining and simplifying the PDP I would recommend that it is not necessary to include this additional rule.

37 A PIM would be required as part of the Building Consent process for any building on the submission site. The PIM would alert Council and the landowner seeking building consent to the potential flood and liquefaction hazards and the historic landfill and these matters would be addressed through the building consent process. Managing natural hazards through the building consent process would appear to be consistent with how other sites to be rezoned LDSR at Albert Town are to be dealt with. Specifically, as shown on the extract from Council's Hazard Maps attached as **Appendix A** to this evidence, properties at Kinnibeg Street, Wicklow Terrace, Wairau Road and Alison Avenue are subject to the same flood hazard as the submission site with no site specific provisions required to address flooding. This includes a 4.0 hectare property at 126 Alison Avenue that includes a single residential dwelling and is to be upzoned to LDSR as part of Stage 3 of the PDP despite being covered by the flood hazard associated with the Clutha River. I expect that natural hazards and permitted residential development on the Alison Avenue site would be managed through the Building Act and I consider that the same approach can be applied to the submission site.

38 In my experience it would also be very unusual for development to proceed on a large land holding, such as the submission site, prior to subdivision. Subdivision consent provides the

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<sup>5</sup> Paragraph 20.12 of Ms. Devlin's s42A Report

Developer with the necessary Council approvals to service the development but also the certainty that their development can be sold down on appropriately sized land parcels.

39 However, if the Commission deem it necessary to include the rule outlined by Ms Devlin then I support that drafting.

#### Landfill

40 As previously outlined the submission site includes an area, in its north western corner, that has historically been used for landfill purposes. An initial assessment prepared by e3 Scientific concludes that the material deposited on the site is likely to be limited to tree stumps, slash and organic material and is unlikely to pose a risk to human health through the presence of contaminants in the soil. That being said s3 Scientific advise that further detailed assessment would be required to confirm whether contaminants are present. I consider that the management of contaminants on site can be appropriately achieved through the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (the NES).

41 The provisions of the NES would need to be achieved at the time of subdivision, earthworks taking place or a change of use being proposed on site. Detailed Site Investigations would be required to identify the extent of any contamination and any necessary remedial works. I consider that the issues associated with the historic landfill can be appropriately addressed through future resource consent processes and are commonly done so. In addition, as with the flood hazard, the PIM/Building Consent process would alert Council and the landowner to the presence of the historic landfill site and would require that the provisions of the NES to be met prior to any permitted residential development being undertaken.

42 In addition to the potential for site contamination associated with the historic landfill activities there is potential for instability due to the organic nature of the material deposited on the site. Again I consider that any instability issues would be appropriately dealt with at subdivision stage and that the PIM/Building Consent process would address such issues prior to the construction of permitted residential development.

#### Infrastructure

43 The evidence of Mr. Powell confirms that reticulated water supply and wastewater connections are available to the site and that it is likely that stormwater could be appropriately treated and attenuated onsite such that it could discharge to the Cardrona River. Mr. Powell expresses concern however at the lack of modelling of network capacity

and necessary upgrades required to service the submission site and on this basis opposes the proposed rezoning until such information is provided. That information is provided in the evidence of Ms. Greaves.

44 As outlined in the evidence of Ms. Greaves an assessment has now been undertaken and it has been confirmed (by Mr. Powell) that there is sufficient capacity within the existing services network to accommodate the future development of the submission site to the extent that the LDSR zoning provides and that future upgrades that may be necessary are feasible and can be determined based on detailed subdivision design.

45 I therefore adopt the opinion of Ms. Greaves that the proposed rezoning of the submission site can be appropriately serviced via the existing service network and that any necessary upgrades are feasible.

#### Summary

46 As outlined above Ms. Devlin recommends that the relief sought is rejected due to the absence of detailed information on servicing capacity. I consider that the evidence of Ms. Greaves adequately addresses this matter. In addition I consider that, based on the assessments of GeoSolve and e3 Scientific and the evidence of Mr. Bond, natural hazards and potential contamination issues associated with the historic landfill activities can be appropriately mitigated. I consider that the management of natural hazards can be secured either through reliance on the Building Act 2004 or, if necessary, through the inclusion of the site specific rule and associated earthworks plan in Chapter 7 of the PDP.

47 Overall, having considered the proposed rezoning and consequential realignment of the UGB and Landscape Classification Line against Council's Rezoning Assessment Principles<sup>6</sup> I consider that the relief sought is consistent with the objectives and policies of the LDSR Zone and the PDPs Strategic Directions chapters<sup>7</sup> and gives effect to the relevant provisions of the PORPS 19. In addition I am not aware of any issues debated in recent plan changes that are of particular relevance to the relief sought.

48 The proposed realignment of the UGB and Landscape Classification Line will ensure that the proposed rezoning is consistent with the additional overlays and constraints that are included on the PDP maps. I also note that the spatial extent of the proposed rezoning and realigned UGB do not encroach into the Wāhi Tūpuna overlay notified as part of Stage 3 of

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<sup>6</sup> As set out at Paragraph 8.7 of Mr. Barr's Strategic Overview for all of Stage 3

<sup>7</sup> Chapters 3 - 6

the Proposed District Plan. For that reason, we have not considered the provisions in Chapter 39 Wāhi Tūpuna.

49 I consider that the proposed rezoning adequately takes into account the location and environmental features of the submission site and wider area.

50 As set out in Ms. Greaves evidence and confirmed by Council the submission site can be appropriately serviced and the rezoning will therefore not result in unmeetable expectations from the landowners with regard to the provision of services and infrastructure and will not adversely affect service and roading capacity in the wider area.

51 I consider that natural hazards can be appropriately managed through the resource consent process.

52 I consider that the proposed rezoning will not result in issues relating to the presence of incompatible land uses and that the rezoning would not be more appropriately dealt with through a resource consent process rather than the current plan change process. In addition the proposed rezoning is not reliant on any existing resource consents or existing use rights.

53 I therefore consider that the relief sought comfortably accords with Council's Rezoning Assessment Principles.

## **Part 2 Assessment**

54 Under Section 32 of the RMA the extent to which the objectives of a proposed plan are the most appropriate way to achieve the purpose of the Act, and whether the provisions of the proposed plan are the most appropriate way of achieving those objectives, must be examined.

55 I consider that the objectives and policies of the Proposed District Plan, as they relate to Strategic Direction, Urban Development, Landscapes and Rural Character and the Lower Density Suburban Residential Zone, are an appropriate means of achieving the purpose of the Act.

56 I consider that the relief sought, when compared to alternative options for the site, is the most appropriate means of achieving the objectives of the Proposed District Plan.

57 I consider that the relief sought will be consistent with Section 5 of the Act in that it will provide for the use, development, and protection of natural and physical resources in a way,

or at a rate, that enables people and communities to provide for their social, economic and cultural wellbeing and for their health and safety while safeguarding the life-supporting capacity or air, water, soil and ecosystems.

58 Through the provisions of the Proposed District Plan the development enabled by the proposed rezoning will be appropriately controlled and managed to ensure that the environmental effects arising are appropriately avoided, remedied or mitigated.

59 I consider that the proposed rezoning adequately recognises and provides for the relevant matters of national importance set out in Section 6, specifically the preservation of the natural character of rivers and their margins and their protection from inappropriate subdivision, use and development (s6(a)), the maintenance and enhancement of public access to and along rivers (s6(d)), the relationship of Maori and the culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga (s6(e)) and the management of significant risks from natural hazards (s6(h)).

60 In addition I consider that the proposed rezoning has appropriate regard to the relevant Section 7 matters.

61 With regard to Section 8 - Treaty Principles I consider that the proposal appropriately protects Māori interests through the avoidance of the identified Wāhi Tūpuna area as part of the proposed rezoning and associated realignment of the UGB.

62 I therefore consider that the relief sought in the submission of Southern Ventures Property Limited achieves the purpose of the RMA.

### **Conclusion**

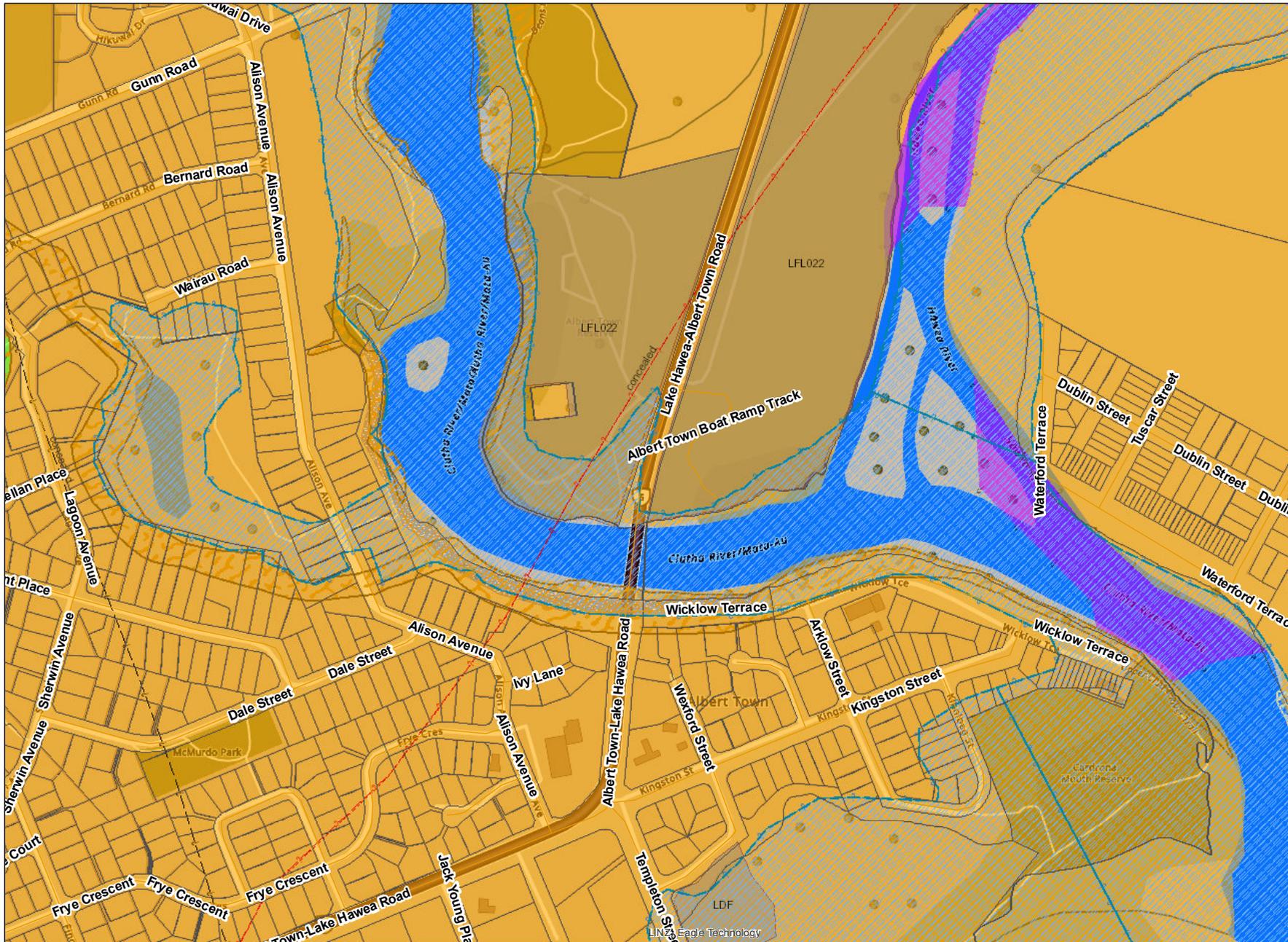
63 Overall, having carefully considered the matters set out in Section 32, I consider that the partial rezoning of the submission site to Lower Density Suburban Residential and the associated realignment of the Urban Growth Boundary and Landscape Classification Line will meet the purpose of the RMA.



Scott Sneddon Edgar

29<sup>th</sup> May 2020

## Appendix A: QLDC Hazard Map



**Legend**

- Dangerous Goods Licence**
  - LPG CYLINDER
  - POTENTIALLY CONTAMINATED SITE
- Flood Return period**
  - 150 Year
  - 100 Year
  - 75 Year
  - 50 Year
- Faults**
  - Active
  - Inactive
- Potentially Contaminated Sites**
  - Contaminated Sites
  - Potentially Contaminated Sites
  - Managed / Remediated
  - Dangerous Goods Licence
  - Landfill
- Landslide Areas**
  - Active Pre-existing Schist Debris Landslides
  - Pre-existing Schist Debris Landslides
  - Dormant Pre-existing Schist Debris Landslides
  - Slope Failure Hazard in Superficial Deposits
  - Shallow Slips and Debris Flows in Colluvium
  - Debris Flow Hazards
  - Rockfall
  - Landslide Areas (Outside priority areas)
  - Flooding - rainfall
  - Flooding - damburst
  - Erosion Areas
  - Alluvial Fan High Hazard - Channels
  - Alluvial Fan High Hazard - Incision Line
  - Alluvial Fan High Hazard - Catchment Areas
  - Alluvial Fan High Hazard - Hazard Area
  - Alluvial Fan High Hazard - Source Area
- Alluvial Fan - ORC**
  - fa - fan active bed
  - fra - fan recently active
  - fla - fan less recently active
- Alluvial Fans Regional scale**
  - Active, Composite
  - Active, Debris-dominated
  - Active, Floodwater-dominated
  - Inactive, Composite
  - Inactive, Debris-dominated
  - Inactive, Floodwater-dominated
- Liquefaction Risk**
  - LIC 1 - Nil to Low
  - LIC 1 (P) - Probably Low
  - LIC 2 (P) - Possibly Moderate
  - LIC 3 (P) - Possibly High
  - Possibly Susceptible
  - Susceptible
- Avalanche Areas**
  - Avalanche Areas
- Lines and areas with approximate locations are shown with '-?.'**

The information provided on this map is intended to be general information only. While considerable effort has been made to ensure that the information provided on this site is accurate, current and otherwise adequate in all respects, Queenstown Lakes District Council does not accept any responsibility for content and shall not be responsible for, and excludes all liability, with relation to any claims whatsoever arising from the use of this site and data held within.



Scale @A3 paper size - 1:4,514



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17/05/2020