

BEFORE THE HEARING PANEL

UNDER the Resource Management Act
1991

IN THE MATTER of submissions and further
submissions on Upper Hutt
District Council Plan Change
49- Variation 1 to the Operative
District Plan Silverstream Spur.

Submitter **GUILDFORD TIMBER
COMPANY LTD
(Submitter 82, Further
Submitter 12).**

STATEMENT OF EVIDENCE OF PHILLIP READ

INSTRUCTURE, SERVICES, ROADING & HAZARDS

ON BEHALF OF GUILDFORD TIMBER COMPANY LTD

Dated: 17 November 2023

Solicitor Acting:
Luke Walker
Mallett Partners
Level 12, City Chambers
142 Featherston Street, PO Box 10341
Wellington
Tel: (04) 472 0022
Email: luke.walker@mallett.co.nz

Counsel Acting:
PD Tancock
Harbour Chambers
Level 1, 5 Cable Street
PO Box 10-242
Wellington
Tel: (04) 499 2684
Email:
[phernne.tancock@legalchambers
.co.nz](mailto:phernne.tancock@legalchambers.co.nz)

1.0 Qualifications and Expertise

1.1 My name is Phil Read. I am the Manager of the Land Development Team of Awa Environmental Limited, a multi-disciplined civil and environmental engineering consultancy based in Auckland and Wellington.

1.2 I hold a New Zealand Certificate in Engineering (Civil) and have 27 years of experience in engineering infrastructure and land development, including work for both public and private entities around NZ.

1.3 I have worked for a civil engineering contractor for 7 years managing public and private civil engineering projects, and then in civil engineering consultancy for the last 20 years. I worked at Calibre (formally Duffill Watts & King) as a civil designer, senior Engineer and Urban Development Lead, and for the last 2.5 years at Awa Environmental as the Manager of Land Development.

1.4 My experience over the past 20 years is in the design of stormwater, wastewater, water, earthworks and roads. My experience includes the design of stormwater management systems using a low impact design approach, and also designing and leading multiple public water projects for Wellington Water over a 10-year period, and design of residential development and supporting infrastructure.

2.0 Code of Conduct

2.1 I have read the Code of Conduct for expert witnesses in the Environment Court Practice Note 2023. I agree to comply with this Code. The evidence in my statement is within my area of 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 I express.

3.0 Scope of Evidence

3.1 One aspect of Plan Change 49-Variation 1 is to enable infrastructure on the Silverstream Spur. My statement of evidence relates to the infrastructure required for the Southern Growth Area (**SGA**).

3.1.1 The SGA surrounds Silverstream and Pinehaven to the west and south. The Spur lies at the northern end of the SGA at the end of Kiln Street – refer **Figure 1** below.

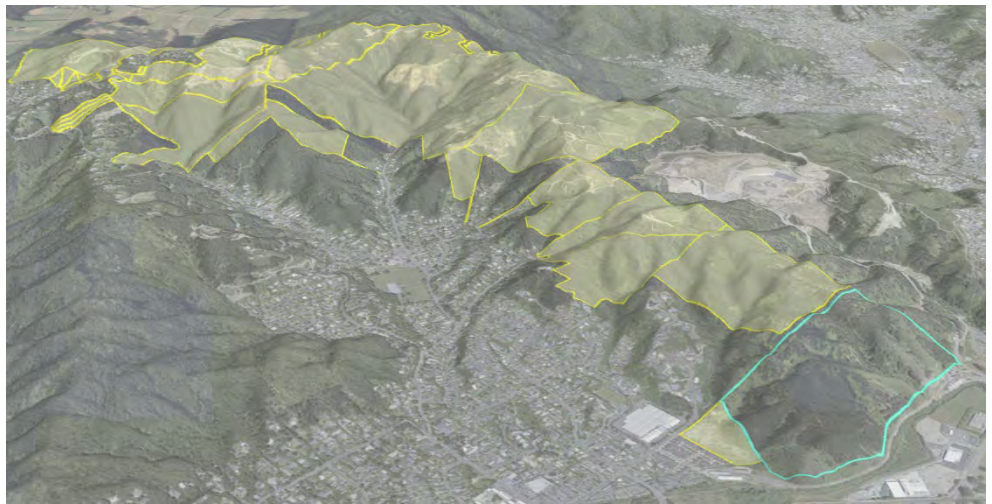


Figure 1 - Southern Growth Area with Spur

3.1.2 The Silverstream Spur Infrastructure is provided for in Variation 1 in a new policy to the Natural Open Spaces Chapter, NOSZ-P6, which seeks to:

“Enable infrastructure including a transport corridor within the Silverstream Spur (pt Sec 1 SO 34755, Parcel I: 3875189) at an appropriate scale, design and location to:

1. Open access for potential development of the Southern Growth Area (SGA).
2. Enable the use of the Silverstream Spur for passive recreation, conservation, and customary activities.

3.1.3 The effects of any development of the SGA are managed in accordance with a second new policy, NOSZ-P7, which seeks to

protect identified areas of significant indigenous vegetation from adverse effects from development.’

4.0 Infrastructure requirements for the SGA

4.1 Existing roading and Three Waters infrastructure currently service the residential zones within the Silverstream and Pinehaven gullies, along with their respective lower reaches. However, the rural regions of Blue Mountains Road and Avro Road are not currently serviced by Council’s Three Waters infrastructure.

4.2 The SGA is generally elevated well above the existing residential and rural areas described above and are difficult to access from the existing roading infrastructure due to the steep topography. The SGA also has limited options for reasonable legal access to any public roadway. Some legal access options are possible (i.e., off Wyndham Road) but again topography and the narrow access leg widths make road access to the SGA via these access points difficult. For a development area of this size, several accesses are needed.

4.3 The Silverstream Spur provides various alignment opportunities to gain access from an existing public road despite its elevation and topography, in a location where traffic onto the roading network can be better managed and topography is conducive to the construction of a road and supporting infrastructure. The Spur provides vital connector between the SGA, Pinehaven and Silverstream and allows direct connection of services into Council’s existing infrastructure networks.

4.4 The Spur therefore provides the best option for road access and infrastructure services for future development of the SGA. Council has sought to plan for this corridor via plan Change 49 Variation 1.

4.5 The following infrastructure is needed to service the SGA:

- Road corridor for vehicle and pedestrian access.
- Associated stormwater infrastructure (piped reticulation, treatment devices, attenuation area).

- Extension of the trunk wastewater network (approximately 1.7km).
- Extension of the bulk water supply network (approximately 3.1km).
- Water supply reservoir (1.3mL) at approximate RL 270m and
- Power and fibre services.

4.6 This is recognised in new proposed rule NOSZ-R15 road and associated network utility infrastructure, including storage tanks or reservoirs on the Silverstream Spur Natural Area (Pt Sec SO 34755 Parcel ID: 387518. This provides for infrastructure as a controlled activity where standards are met.

4.7 The new standards proposed by Council are provided for in NOSZ-S4, and are:

1. Carriageway traffic lane widths shall not exceed 3.5m per lane;
2. Footpath or shared path shall be provided on one side of the road only.
3. Road and footpath gradients shall not exceed 1:8;
4. Parallel parking may be provided along one side of the road.
5. Transport corridor and earthworks are not located within the Silverstream Natural Area.

4.8 I have reviewed these standards and confirm that in my professional opinion infrastructure can be designed to meet those standards on the spur. I discuss this in more detail below.

5.0 Roding and Development of Road Corridor

5.1 In terms of roading there are several options to access the SGA, via the Silverstream Spur. Roding may also be needed to better provide

for recreational use of the Spur, and better access would open up the Spur for more recreational uses.

- 5.2 The SGA is land locked and lacks reasonable legal access and, as recognised by Council, it is important to provide provisions that allow for an infrastructure corridor to provide for future roading connection and infrastructure access. It is sensible to do this when the change in land use of the Spur from residential to Natural Open Space is being contemplated, to avoid later difficulties associated with conflict caused by that zoning.
- 5.3 Number 44 Kiln Street at the entrance to the Spur was also purchased by GTC in 2018 (during the period that the land swap was contemplated) to assist with creating suitable access to the Spur and via the Spur to the SGA.
- 5.4 An access corridor option for accessing the SGA via the Spur was designed by Envelope for the joint application with UHCC to the Infrastructure Accelerator Funding Application in 2022 – refer **Figure 2** below. I was not involved in that design, which was done at a time that residential development of the Spur was being proposed.
- 5.5 That option consists of a 1.4km by 18m wide road corridor (12m wide road width including provision for parking), along with a footpath on one side. The maximum road gradient was 1:8. The design generally complied with UHCC's Urban Road design standards (appendix C, Figure 1) – Local Distributor Route (<150 houses). It is possible a different road corridor with smaller footprint may be considered.

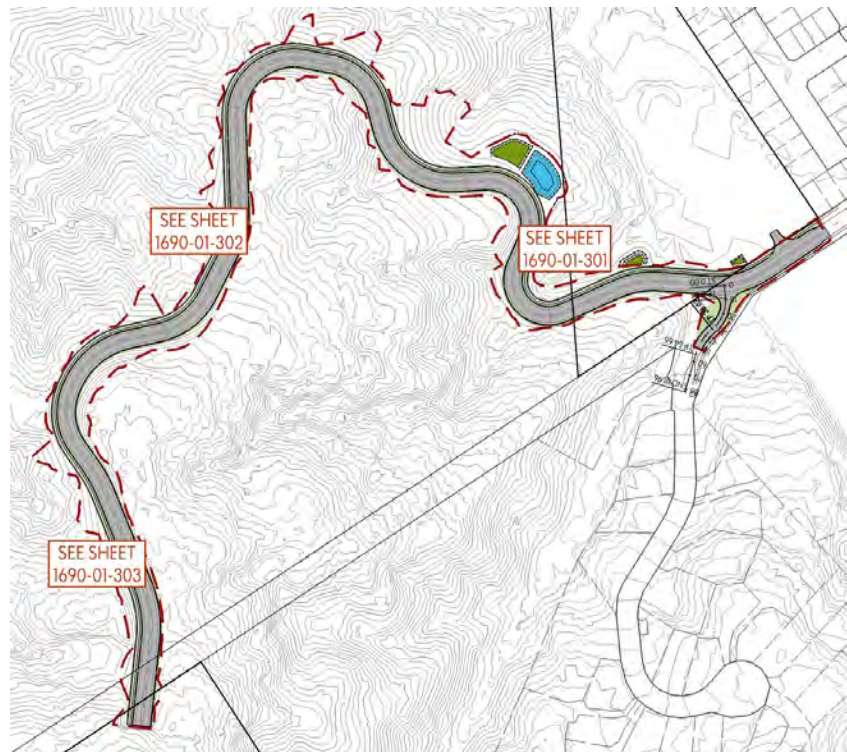


Figure 2 - Envelope Spur Road Access Option

- 5.6 Given Council's decision to keep the Spur in Council ownership and rezone it Natural Open Space, development of housing on the Spur is no longer proposed.
- 5.7 Any future roading design would need to be revised now that that the Spur is to be rezoned as open space and tailored to accommodate development for the SGA and recreational use. I would expect that the corridor alignment in the Envelope design would also be significantly revised given that it will not be accommodating a residential development.
- 5.8 I note that this is just one possible roading option to access the site but is a good example showing that it is feasible and achievable to develop roading on the Spur and that there are design solutions that would meet the proposed standards. As noted by some submitters, other options to access the Spur site exist via the paper road and/or Reynolds Batch Drive. The feasibility of these are yet to be worked through, and would be assessed in more detail and the associated effects assessed as part of a detailed design stage, and would need to go through a resource consent process.

5.9 In my opinion, the standards under NOSZ- S4 can be met by multiple alignment options, and potentially via alternative access locations to the Spur. Specifically, as shown in the Envelope design a 1:8 maximum gradient can be achieved through earthworks, including alignment selection and by a lowering of the Spur height slightly in some locations (if required).

6.0 Stormwater

6.1 Stormwater runoff from the spur road corridor would be collected within a localised primary pipe network and discharged to a detention pond to provide attenuation of peak storm flows. Treatment of the “first flush” runoff could be achieved by several appropriate methods such as rain gardens, tree pits or a wetland. A conceptual stormwater management design was previously prepared by Envelope for the possible Spur road corridor showing how this could occur. The design again was one example to demonstrate a possible option to manage stormwater, which utilises GTC land at Kiln Street. This is one of many different schemes that could be designed to meet the requirements.

6.2 Natural runoff from existing water courses and gullies would be passed beneath the road accessway via appropriately sized culverts.

6.3 I am confident that options exist to enable stormwater and runoff design to allow it to be managed onsite, to remain hydrologically neutral and ensure that any effects could be avoided, remedied or mitigated, and not result in adverse effects on other properties. There are stormwater and additional hazard rules that apply which would be considered as part of the resource consenting process.

7.0 Network utility infrastructure – services

7.1 Water, wastewater (sewer), power and communication network services would be laid within the proposed road corridor across the Spur and connect into the main networks at Kiln Street. Constraints for such systems exist (topography, water courses, and soil

permeability) and will dictate the development scheme as part of future processes.

8.0 Storage tanks or reservoirs

8.1 A new water reservoir is likely to be required to service the SGA. This infrastructure is referred to in the proposed provisions.

8.2 A new 1.3 ML water reservoir (RL 270m) located above the current Pinehaven reservoir (RL 154m) is provisionally proposed, fed by a new water main running from the Fergusson Drive, up Field Street and Kiln Street, and up through the Spur road corridor. Demand reduction measures are envisaged by way of individual Lot rainwater harvesting tanks. This will reduce the demand on Council's supply network, and in turn assist with a reduction to stormwater discharge.

9.0 Earthworks

9.1 Earthworks will be required to develop infrastructure. These can be designed to reduce any adverse effects and conditions imposed at resource consent stage to manage the construction process to ensure that sediment and erosion controls are properly imposed, the site is stable, and adverse effects on sensitive areas managed. This is standard practice will all earthworks.

9.2 GTC is seeking as part of the New Rule NOSZ-R15, (2) that the Activity Status is Restricted Discretionary where compliance is not achieved with the requirements of NOSZ-S4. GTC suggests that Council reserve the following discretion and impose conditions on the following.

- (a) Road alignment and design.
- (b) Provision of and effects of network utilities or services.
- (c) Earthworks and accidental discovery.

9.3 These items are commonly considered and worked through by the developer and their engineer during the concept design phase for

resource consent. Where non-compliance with baseline design requirements become evident to the developer/engineer, close consultation with Council is normative. These issues are typically worked through well in advance during the due-diligence and early phase as they may have an effect on the development scheme.

9.4 I am in support of the new policy on accidental discovery. This is a standard condition on most consents and is well understood by most developers and engineering consultants.

9.5 I am confident that the new rules provided will allow a framework to allow the necessary infrastructure to be provided while safeguarding:

- Council and rate payers from unknown and/or significant financial burden due to increased servicing effects:
- Undesirable effects on the biodiversity identified in the Silverstream Spur Natural Area,
- Users and operators from unsafe or poorly designed roads and infrastructure assets.

10.0 Response to Officer's Report

10.1 I have read the Officer's Report and agree with the recommendations made under paragraphs 119 and 189.

11.0 Issues Raised by Submitters

11.1 The following responses relate to matters raised by submitters, as discussed under Part 8 of the Officer Report (Topic 5: Infrastructure including a transport corridor):

(i) **(Paragraph 155, bullet point 3) “Council has not received a design of such a road and where it will be situated from a developer”**

- As noted above, my understanding is that this is a plan change process and not a resource consent process. A

particular design or proposal for the road and the final form and location of the road is not required for a plan change, which seeks to provide a pathway for a particular design to be developed and go through a consent process in the future.

- I have provided the discussion above to demonstrate that the provisions of Variation 1, in particular the standards and control proposed are workable, and the figures have shown one possible way a design could be accommodated to do that. That design is not proposed and related to an earlier scheme that contained housing that will no longer be feasible. There are various other design options depending upon the nature and final form of the development proposed and access corridor chosen. It's worth noting a "low Impact" design solution for the road would be acceptable to GTC.
 - A concept design was carried out for Council (by GTC: Aug 2021 – May 2022) to assist with their expression of interest application to the Government's Infrastructure Acceleration fund for a road and infrastructure corridor on the Silverstream Spur to enable access to the SGA. The Officer references the application in paragraph 35.
- (ii) **(Paragraph 155, bullet point 4) "*to maintain a gradient no steeper than 1:8 will require a long windy road with a lot of earthworks that will impact the Natural Open Space and Significant Natural Areas.*"**
- It is acknowledged that there is up to 110m of rise from both Kiln Street and Reynolds Bach Drive to the top of the Spur (RL 160m). For a 1:8 gradient (maximum) this necessitates a minimum road length of 880m. As the crow flies, the most direct routes (although exceeding 1:8) are 500m and 550m respectively. The minimum road length of 880m would require some meandering and cut/fill earthworks, however this is typical of access roads in the Wellington region.

- A less direct alignment facilitates better public access to a greater portion of the Silverstream Spur for recreational use. Earthworks can also be used to lower levels to ease the road gradient, depending on the location and have the potential to reduce the length of the road.
 - It is my understanding that GTC's ecologist Dr Keesing has assessed the Silverstream Spur Significant Natural Areas and refined the extent of those areas on the site making it easier to avoid those ecologically sensitive areas in any design phase. Variation 1 does provide for consent to be obtained and for the consent to deal with additional criteria/considerations where vegetation clearance is needed or whereby infrastructure does need to be sited in these areas.
- (iii) **(Paragraph 155, bullet point 6) *“Increased runoff from the road impacting surrounding properties”*.**
- Any increase in runoff from a road up through the Spur can be mitigated by appropriate measures such as a detention pond with a controlled outlet. This will provide hydraulic neutrality. Flood modelling can be undertaken to confirm that any effects are less than minor during a 1 in 100-year storm event, plus an allowance for climate change so to not pose a risk to lower properties.
 - The above scenario also provides better control of runoff and debris associated with forestry operations, preventing blockage of downstream infrastructure and the resulting flood risk this poses.
 - There is also the potential to design the pond to double as a wetland, further enhancing the ecological and aesthetic aspects of the area.

(iv) **(Paragraph 155, bullet point 12) “The edge effects from cutting the Spur in two, stormwater and erosion effects...”**

- I refer to responses above. I am confident that this can be designed and managed at consent stage and will not be an issue. Insofar as this relates to infrastructure, existing flow paths down the Spur gullies will be left in their natural state, with appropriately sized culverts passing flow beneath the road. Scour protection/treatment can mitigate any scour or erosion effects at the above culverts and pond outlet.

(v) **(Paragraph 155, bullet point 8) The Silverstream Spur is not critical to enable access to the Southern Growth Area, there are ample alternative options for access”**

- The SGA is generally elevated well above the existing residential and rural areas in Silverstream and Pinehaven areas and are difficult to access from the local roading networks due to the steep topography.
- The SGA also has limited legal access to any public roadway, it is in a sense landlocked. Some legal access options are possible (i.e., off Wyndham Road) but again topography and the narrow access leg widths make road access to the SGA via these access points difficult.
- In other places there may also be legal access, but the steep topography means that no reasonable access can be obtained affordably.
- The Silverstream Spur provides various alignment opportunities to gain access from an existing public road despite its elevation and topography and can be better accommodated by the traffic network in those locations. GTC is currently investigating those.
- A semi-meandering access road up through the Spur would also provide broader public access to the Spur.

- Therefore, road access and infrastructure services for future development of the SGA would be best achievable via the Silverstream Spur.
- (vi) ***“The entire area seems to be covered by the recently distributed Plan Change 47 for Natural Hazards, specifically high and unstable slopes with no geological report to identify whether the spur is suitable for any development.”***
- The site is shown to have a low to moderate slope failure risk in GWRC’s Hazards and Emergency Management Data (refer **Figure 4** below).

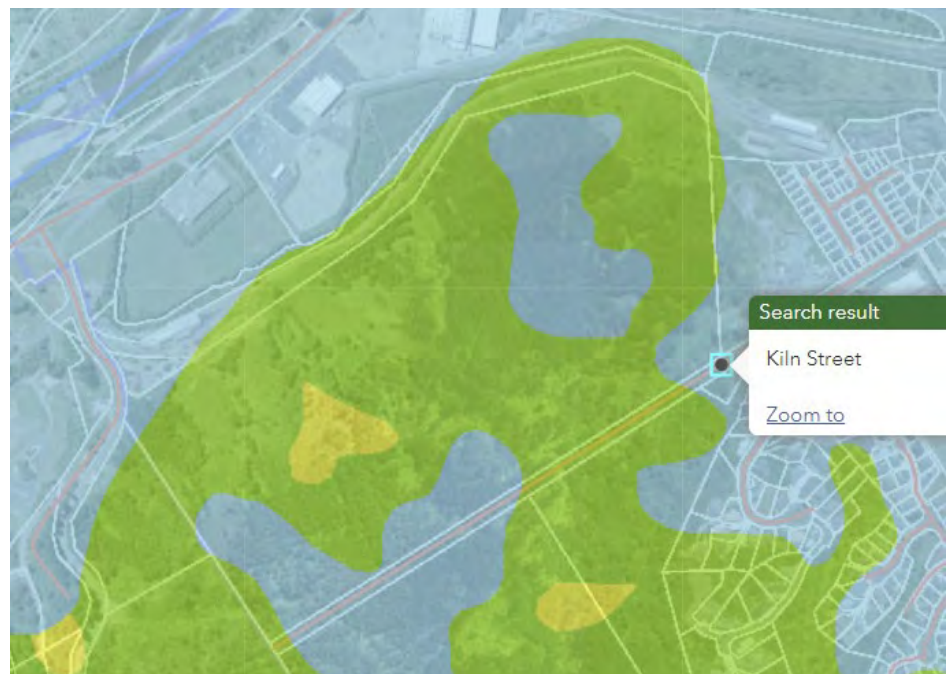


Figure 3 - GWRC Slope Failure Hazard Map

- The 2020 district wide assessment by Coffey’s for the proposed plan change 47 assessed the site as having a ‘High Slope Risk (refer **Figure 5** below).



Figure 4 - UHCC Plan Change 47 - High Risk (Coffey, 2020)

- Coffey noted that areas of high slope hazard have been classified as those areas where slopes are greater than 26 degrees, and that these areas will require a specific geotechnical assessment. The nature of the assessment will be determined by a geo-professional based on the nature of the site and the proposed development.
 - Engagement with a geo-professional will be undertaken for a more site-specific assessment, and the proposed Spur access road and infrastructure designed to accommodate their findings. This is a typical approach for most developments in the Wellington region.
- (vii) **Paragraph 162 (Submission [S63.1]) “...a road and associated utilities with housing and roading would threaten the Silver Stream Heritage Railway with the extra stormwater and runoff and disturbance to the land.”**
- No houses are proposed within Council’s Spur land. Additional runoff generated from the formation of an access road can be mitigated by incorporating attenuation for up to the 1 in 100-year (1% AEP) storm event. This could be achieved by a pond.

- Flood modelling can be carried out to confirm that any flood risk to downstream properties is less than minor, and consented design adjusted accordingly, this is typically undertaken at resource consent stage.
- (viii) ***Submissions were made seeking Reynolds Bach Drive be considered as an option to access the southern growth area (refer Officer report paragraph 166)***
- This is another feasible option that can be explored further; however, flexibility is recommended by Council as part of Variation 1 to ensure that the wide range of associated engineering aspects, protection of indigenous vegetation, and the effects on the receiving roads are weighed up before selecting the final access point as part of a decision to seek resource consent.
 - Submission [S82.3] by GTC, summarised in paragraph 170 of the Officer's report, states that:

“A new collector road would:

enable the construction of substantial new community water supply assets to the overall benefit of the City's resilience and service levels' and,

'will also facilitate enhancements to the safe, efficient function of the transport network and in particular,

- *it will afford a safer route for the transport of materials from retiring forestry plantations, away from more constrained parts of the network”.*

- The Officer's analysis of GTC's [S82.3] under paragraph 243 stated:

It is not considered appropriate to remove 'appropriate scale, design, and location' in relation to enabling a transport corridor.

- *Nor is it considered appropriate to 'service residential development on the Spur.'*

- I agree with GTC that the construction of a substantial new community water supply would provide resilience benefits to the community. This is because the new reservoir (at a much higher elevation than all the other current reservoir) could be connected into the downstream water zones, enhancing water supply and pressure to these zones, and emergency backup.

- I also agree that the proposed Spur access road will provide a vital, alternative access for forestry traffic, removing them off from existing local roading networks.

- I recommend that in relation to enabling a transport corridor on the Spur that the wording *'at an appropriate scale, design and location'* be included. I support the comments of Mr Hall that the reference to the Southern Growth Area should remain in Variation 1 provisions as it is relevant to determining what an appropriate location, size and scale is.

12.0 Conclusion

- 12.1 In my expert opinion, I support the recommendation that Plan Change 49 Variation 1 provides for a public road and infrastructure corridor service development the future Southern Growth Area SGA), with the amendments sought in the evidence of Dr Keesing and Mr Hall.
- 12.2 The most practical and constructable (engineering wise) access to the SGA is via the Council owned Spur, via either Kiln Street or Reynolds Bach Drive. A suitable alignment is able to be constructed at a maximum gradient of 1:8. Stormwater effects will be able to be adequately mitigated and managed to ensure hydraulic neutrality is achieved and impacts on the downstream properties of future development are less than minor.

- 12.3 There are a number of access alignments (from the above access points) over the Spur site which can be engineered to meet the proposed policies (NOSZ-P6, P7), rules (NOSZ-R15 1 and 2) and standards (NZOA-S4).
- 12.4 A new water supply extension to Council's network, along with a new water reservoir, will have a positive effect on Council's resilience of supply.

Phil Read

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Dated 17 November 2023