

BEFORE THE HEARING PANEL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a Notice of Requirement to alter a designation for
the HCC Central City Reservoir – Ruakiwi Road

**STATEMENT OF EVIDENCE OF CHRISTOPHER ALLINGTON HARDY ON
BEHALF OF HAMILTON CITY COUNCIL AS REQUIRING AUTHORITY**

(Alternatives Assessment)

Dated 19 December 2025

LACHLAN MULDOWNEY
BARRISTER

P +64 7 834 4336 **M** +64 21 471 490

Office Panama Square, 14 Garden Place, Hamilton

Postal PO Box 9169, Waikato Mail Centre, Hamilton 3240

www.lachlanmuldowney.co.nz

INTRODUCTION

1. My full name is Christopher Allington Hardy and I am a Technical Principal (Three Waters) at WSP Ltd providing technical direction on projects.
2. I hold the qualifications of BE (Civil) from the University of Auckland, 2003, and NZCE (Civil) from the Waikato Polytechnic, 2000. Prior to my current position, I was an Associate Director at AECOM Hamilton. I had held that position with AECOM from 2010 to 2022. I have over 20 years of experience as a civil engineer working on stormwater, water and wastewater (**three waters**) networks.
3. My relevant experience includes:
 - a) Technical advisor to Hamilton City Council (**Council**) regarding the water and wastewater aspects of various plan changes and development including Ruakura, Rotokauri North, and the Te Rapa North Industrial Zone.
 - b) Involvement in the development of supporting technical reports for Plan Change 12 (Enabling Housing Supply) (**PC 12**), and the Infrastructure Acceleration Fund (**IAF**) funding application for wastewater and water in Hamilton.
 - c) Planning and design of wastewater and water elements of the Hamilton central city strategic infrastructure which includes the IAF Reservoir Project.
4. I provide this evidence on behalf of Council as the Requiring Authority (**RA**) which has issued the Notice of Requirement (**NOR**) for the Central City Reservoir – Ruakiwi Road (**Reservoir Project**).
5. I was the Technical Lead Engineer responsible for the assessment of potential locations for the new water reservoirs including initial

screening of a long list of sites and subsequent multi-criteria, multi-discipline assessment of a short list of viable sites to select the preferred site.

6. I am the Technical Lead for the design of mechanical and pipeline elements of the Reservoir Project that are being undertaken by WSP. In this role I provide general oversight of all elements being undertaken by WSP. I was also involved directly in the development of the stormwater strategy for the project.

CODE OF CONDUCT

7. I am familiar with the Code of Conduct for Expert Witnesses (Environment Court Practice Note 2023) and although I note this is a Council hearing, I agree to comply with this code. The evidence I will present is within my area of expertise, except where I state that I am relying on information provided by another party. I have not knowingly omitted facts or information that might alter or detract from opinions I express.

SCOPE OF EVIDENCE

8. My evidence addresses the following:
 - a) My response to submissions in relation to the selection of the Ruakiwi Road site as the preferred location for the new water storage reservoirs;
 - b) My response to the s 42A report; and
 - c) The status of the application to Waikato Regional Council (**WRC**) for stormwater discharge resource consent.

EXECUTIVE SUMMARY

9. Council has an existing designation at the high point of Ruakiwi Road where the existing Ruakiwi Reservoir is located.
10. Council undertook an assessment of alternative sites to determine if the current site is the most suitable location for new reservoirs to service future growth in the central city.
11. The assessment showed that the existing designated site, and adjacent reserve area required for the new reservoir footprint, is the preferred location for the new reservoirs.
12. The existing site has significant benefits over other sites in terms of the efficient and resilient provision of critical water services, including lower energy use, deferral of capital cost, and operability.
13. Submissions have raised concerns regarding the consistency of the proposed Reservoir Project with Council objectives and the location of the proposed reservoirs.
14. Submissions also state that there are other more suitable sites that would not require valuable reserve in the Lake Domain to be used. One submission notes that the 'technical' criteria in the reservoir location Multi-Criteria Analysis (**MCA**) had, in their view, too high of a weighting compared to 'social' and 'environmental' criteria.
15. Council's priority is to develop up and out from the central city. PC 12, which is now operative, enabled increased housing intensification in accordance with central government's direction, including high-density housing intensification in the walkable catchment (within 800 m) of the central city. The Reservoir Project is consistent with these objectives.
16. A MCA undertaken for the reservoir location assessment was weighted more towards technical considerations (including financial and

resilience) because the proposed infrastructure is critical to realising growth potential in the Hamilton Central Business District (**CBD**).

17. The MCA also considered other drivers (e.g. social, environmental, and cultural) as it was known that the new reservoirs may require more land than the current designation depending on the reservoir form (height versus plan area).
18. A sensitivity assessment of the MCA weightings was carried out, and the results are presented in this statement. The primary 'technical' criteria weighting was reduced from 35% to 15% in favour of increased weightings for two scenarios of 'environment and social', and 'social only'. The existing reservoir site on Ruakiwi Road remained the number one ranked site for both sensitivity scenarios reinforcing the existing site as preferred.
19. In my opinion the existing reservoir site on Ruakiwi Road is the most suitable site for the proposed water reservoirs and I recommend that the NOR is approved.

RUAKIWI ROAD

20. Council has an existing designation at the high point of Ruakiwi Road for the purpose of the provision of water infrastructure. The existing Ruakiwi Reservoir is at this location.
21. Council undertook an assessment of alternative sites to determine if the current site is the most suitable location for the new reservoirs, even though the existing designated site could have been utilised as of right.
22. The assessment was weighted more towards technical considerations (including financial and resilience) because the proposed infrastructure is critical to realising growth potential in the Hamilton CBD. However, the assessment also considered other drivers (e.g. social, environmental, cultural) as it was known that the new reservoirs may

require more land than the current designation depending on the reservoir form (height versus plan area).

23. The assessment showed that the existing designated site, and adjacent reserve area required for the new reservoir footprint, remains the preferred location for new reservoirs to service growth in the Hamilton CBD. The existing site has significant benefits in terms of the efficiency and the resilient provision of critical water services, optimisation and reduction of energy use, and minimising and deferring capital cost.
24. More detail of the assessment is presented in the following sections of my evidence as related to points made in the submissions received.

RESPONSE TO SUBMISSIONS

25. I have reviewed the submissions received and respond to the following submissions as they relate to my area of expertise and involvement:
 - a) Submission No. 1 – Ernest Ross Needham in relation to the location of the reservoir, and the need for both reservoirs.
 - b) Submission No. 5 – Glenda Morrissey in relation to Site Assessment and Alternative Options (including MCA assessment weightings), Location and Zoning Concerns, and Alignment with Council Strategies.
 - c) Submission No. 6 – James and Jill McCulloch in relation to the location of the reservoir.
26. I have jointly addressed the issues raised in the submissions in the following paragraphs.

Site Assessment and Alternative Options

27. The reservoir 'Location Assessment' is described in the report titled 'Hamilton City Council, Hamilton CBD Water Supply Zone - Water Supply

Reservoir Upgrade Location Assessment, 29 May 2025, WSP' which I co-authored and is Appendix D to the NOR.

28. The Location Assessment involved the initial assessment of a long list of 30 sites which was reduced to a short list of six sites via a fatal flaw assessment. The short list was expanded to include three representative sites for a total of nine sites to be assessed in a MCA. The three representative sites were selected from the discarded sites and included in the MCA to confirm their previous exclusion.
29. The MCA was undertaken based on a list of key criteria, scoring weightings, and scores developed with Council engineering and planning staff, and representatives from the various technical disciplines involved in the design of the Reservoir Project. The primary assessment criteria and weightings are shown in the following table (each primary criteria had sub-criteria and sub-weightings not reproduced here).

CRITERIA	WEIGHTING
Financial	20%
Carbon	10%
Cultural	5%
Technical	35%
Resilience	10%
Environment	10%
Social	10%

30. Submission No.5 has noted that:
- a) The criteria scoring weightings prioritise engineering convenience (e.g. Technical) over environmental and community (e.g. social) outcomes.
 - b) Alternative Option 2 site at Peacock Reserve, located near the existing water treatment plant, rated more favourably in terms of community impact but was not pursued further.

31. The 'Technical' criterion was weighted higher in the assessment than other criteria due to the critical role of the strategic infrastructure being assessed, where significant implications on capital and operational costs, and operational requirements exist between the different sites. The assessment yielded a preferred site at the same location as the existing Ruakiwi Reservoir, with the second highest ranked site being located next to the Waiora Water Treatment Plant some 4.8 km away.
32. Other primary weightings have been considered to test the sensitivity of the MCA process as follows:
- a) Alternative 1 – Reduce the 'Technical' criteria from 35% to 15% and increase 'Environmental' and 'Social' from 10% to 20% each.
 - b) Alternative 2 – Reduce the 'Technical' criteria from 35% to 15% and increase the 'Social' criteria from 10% to 30%.
33. The alternative weightings and the resulting site rankings and scores are shown in the following tables with the top three sites highlighted in green (1), yellow (2) and orange (3).

Table 1 Sensitivity analysis primary weightings

CRITERIA	CURRENT ASSESSMENT	ALTERNATIVE 1 – SOCIAL & ENVIRONMENT BIAS	ALTERNATIVE 2 – SOCIAL BIAS
Financial	20%	20%	20%
Carbon	10%	10%	10%
Cultural	5%	5%	5%
Technical	35%	15% (reduced)	15% (reduced)
Resilience	10%	10%	10%
Environment	10%	20% (increased)	10%
Social	10%	20% (increased)	30% (increased)

Table 2 Sensitivity analysis weighted MCA scores (higher is more favourable)

SITE	CURRENT ASSESSMENT	ALTERNATIVE 1 – SOCIAL & ENVIRONMENT BIAS	ALTERNATIVE 2 – SOCIAL BIAS
1 – Gully Reserve 300 Peacocks Road	3.26	3.23	3.15
2 – Peacocks Reserve Near Waiora WTP	3.78	3.69	3.89
4 – Melville Park	3.58	3.37	3.21

5 – Graham Park	3.52	3.37	3.27
9 – Existing Ruakiwi Reservoir Site	4.27	4.22	4.15
10 – Lake Domain Reserve	3.30	3.06	2.95
12 – Hinemoa Park	3.41	3.34	3.08
15 – Kent Street Industrial Area	3.28	3.64	3.59
27 – Marist Park	2.95	2.91	2.70

Table 3 Sensitivity analysis MCA ranking (higher score = higher ranking)

SITE/RANK	CURRENT ASSESSMENT	ALTERNATIVE 1 – SOCIAL & ENVIRONMENT BIAS	ALTERNATIVE 2 – SOCIAL BIAS
1 – Gully Reserve 300 Peacockes Road	8	7	6
2 – Peacockes Reserve Near Waiora WTP	2	2	2
4 – Melville Park	3	4=	5
5 – Graham Park	4	4=	4
9 – Existing Ruakiwi Reservoir Site	1	1	1
10 – Lake Domain Reserve	6	8	8
12 – Hinemoa Park	5	6	7
15 – Kent Street Industrial Area	7	3	3
27 – Marist Park	9	9	9

34. I note the following from the MCA alternatives presented above:

- a) The existing reservoir site (9) remains the preferred site in both alternative weighting scenarios. The site near the Waiora Water Treatment Plant (2) remains the second ranked site in both alternative weighting scenarios.
- b) The relative scores between Site 9 and Site 2 get closer as the social weighting increases, which reflects the higher scoring of Site 2 relative to the Lake Domain Reserve. However, the convergence is not enough for the Waiora Water Treatment Plant site to become the preferred site.
- c) The Kent Street Industrial Area (a representative site) rises from the seventh ranked site to the third ranked site in both alternative weighting scenarios. This is reflective of the alternative

environmental and social weightings favouring industrial type sites away from reserves and residential areas.

35. In my opinion, the MCA and the alternative scenarios presented above demonstrate that the existing reservoir site is the most suitable site for the new reservoirs, acknowledging the opposing aspects of the 'technical' and 'social/environmental' criteria.

Reservoir Preferred Location and Benefits

36. This section of my evidence expands on the reasons why the existing site is preferred based on engineering and operational considerations that are critical for the strategic nature of the proposed reservoirs.
37. The proposed reservoir site is located at the highest point within the CBD supply zone which has the following benefits:
- a) The proposed site has the lowest estimated operational energy cost being approximately 10% lower than the next best site adjacent to the Waiora Water Treatment Plant.
 - b) The proposed site minimises booster pumping requirements increasing resilience of service because water can be supplied at the required level of service (or a reduced level of service in extreme circumstances) to most of the supply zone without the need for pumping.
38. The proposed reservoir can initially use the existing reservoir inlet filling pipeline. This represents a significant capital cost deferral as a new filling pipeline from the Waiora Treatment Plant is not needed now (circa \$15-20M). Deferral of a new filling pipeline will allow it to be appropriately timed and sized to suit actual development uptake.
39. Reservoir sites at lower elevations further away from the CBD supply zone require additional infrastructure to be constructed immediately.

For example, the second highest rated Waiora Treatment Plant site would require a booster pump station sized to service the entire CBD supply zone (much larger than the current proposed booster pump station in Clarence Street), and a new bulk supply pipeline from the Waiora Treatment Plant Reservoir site to the CBD network, at a significant additional up-front capital cost.

Alignment with Council Strategies

40. Submission No.5 has noted that 'The proposal is inconsistent with several key Council documents, including the 2024–54 Infrastructure Strategy, the Long-Term Plan 2024/25, and PC 12 and preservation of the health and wellbeing of Lake Rotoroa and the Waikato River.'
41. The 2024-2054 Infrastructure Strategy (Page 48) outlines the Council's priority to develop up and out from the central city and expressly acknowledges the IAF grant which is funding the Reservoir Project. The Reservoir Project is therefore consistent with the strategy.
42. The proposed new reservoir(s) will not adversely affect the health and wellbeing of Lake Rotoroa nor the Waikato River.
 - a) The reservoir and booster pump station sites have small vehicle working areas for which stormwater treatment will be provided. No other potential stormwater contaminant sources exist.
 - b) Peak flow attenuation will be provided for the Booster Pump Station discharge to the existing piped network and the Waikato River. Peak flow attenuation is not required for discharge to Lake Rotoroa which has a significant buffer capacity and will benefit from increased clean stormwater discharges.
43. PC 12, which is now operative, enabled increased housing intensification in accordance with central government's direction. PC 12 included high-density housing intensification in the walkable catchment

(within 800 m) of the central city. The Reservoir Project is needed to support the outcomes of PC 12.

44. The initial stage of the Reservoir Project involves building one reservoir but securing a designation for two reservoirs. Building one reservoir defers capital spend to when it is needed and will also allow the size of the second reservoir to be optimised if demand is not as high as currently predicted.
45. Both reservoirs were considered in terms of which should be constructed first. The reservoir furthest away from the road has some construction benefits in terms of better access to complete the second reservoir in the future. However, the reservoir nearest the road is proposed to be built first to maintain a compact site with as little impact on the reserve pending confirmation of the timing and scale of the second reservoir in the future.

RESPONSE TO THE S42 REPORT

46. I have reviewed the s 42A Report and have no comments on it nor the proposed conditions.

DISCHARGE CONSENT FROM WAIKATO REGIONAL COUNCIL

47. An application for Discharge Consent has been submitted to WRC and, at the time of filing this evidence, is being processed.

CONCLUSIONS AND RECOMMENDATIONS

48. A MCA of alternative locations, and a comparative energy use assessment, has shown the existing reservoir site on Ruakiwi Road is the most suitable and efficient location for the provision of water storage for the Hamilton central city water supply zone.

49. Submissions have raised concerns regarding the social and environmental impacts of the proposed reservoir location. One submission notes that technical scores in the MCA had, in their view, too high of a weighting compared to social and environmental criteria.
50. A sensitivity assessment of the MCA weighting was carried out. The primary technical weighting was reduced from 35% to 15% in favour in increased weightings for two scenarios of 'environment and social', and 'social only'. The existing reservoir site on Ruakiwi Road remained the number one ranked site for both sensitivity scenarios.
51. In my opinion the area adjacent to the existing reservoir on Ruakiwi Road is the most suitable site for the proposed water reservoirs and I recommend that the NOR is approved.
52. I have reviewed the s 42A report and the proposed conditions, and I do not have any recommended changes.

Christopher Hardy

19 December 2025