

IN THE MATTER	of the Fast-track Approvals Act 2024 (FTAA)
AND IN THE MATTER	of an application for approvals under the FTAA for the Proposed Ōhoka Residential Subdivision FTAA-2606-1253

MEMORANDUM OF DR RICHARD BRENT MEADE

RESPONSE TO PANEL QUESTIONS

30 September 2026

1. Introduction

1.1 Scope and Approach

1. I have been asked by Environment Canterbury to respond, as an independent expert economist, to questions 1 and 2 in Appendix 4 to the Expert Panel's Minute 1 dated 13 September 2026 (**the Panel Minute**). I have also considered whether matters raised in my statement of evidence dated 9 July 2026 (**my Original Report**) are pertinent to other questions in Appendix 4.
2. This memorandum is supplementary to my Original Report. It does not repeat that analysis, or undertake an independent cost-benefit analysis. Instead, it identifies the Applicant material that comes closest to addressing the Panel's questions, and explains whether I consider that material resolves the relevant criticisms in my Original Report.
3. Where the application does not address a criticism, it is not possible to identify a document containing the missing analysis. In those cases, I identify the application material most closely related to the matter and explain why it does not supply the information or analysis required. This approach responds directly to paragraph 25 of the Panel Minute without treating the absence of evidence as evidence of the contrary proposition.
4. I have reviewed the Applicant's material lodged on 10 September 2026, including the memorandum of counsel and attached memorandum of Mr Tim Walsh summarising the updated application documents (**the September Update Memorandum**). I have focused on the updates capable of affecting the economic conclusions in my Original Report, including the revised scheme, transport, wastewater, water-supply, urban-design, landscape, ecological, flood and stormwater material.
5. My background and experience remain as stated in the Original Report, and I continue to confirm that I abide by the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses.

References: Panel Minute, paras 23–25 and Appendix 4; Original Report, paras 1–2 and 11–12; September Update Memorandum.

1.2 Summary of Conclusions

6. My principal conclusions in the Original Report remain unchanged. In particular:
 - 6.1. The Applicant has not demonstrated location-specific, product-specific, and price-specific demand sufficient to support the claimed scale and timing of development at Ōhoka;
 - 6.2. The M.E and Savvy Analyses continue to rely on materially contradictory counterfactuals, so the Applicant has not established what proportion of the proposed housing, retirement-village or commercial capacity would be additional at a regional or national level;
 - 6.3. The Applicant continues to present construction expenditure, employment, and other measures of resource use as economic benefits without demonstrating the incremental consumer surplus, New Zealand producer surplus, or non-market benefits produced by that resource use;

- 6.4. Technical feasibility of infrastructure does not establish that servicing Ōhoka is economically efficient relative to accommodating the same growth in planned alternative locations; and
- 6.5. The significance of the Project's claimed benefits remains asserted rather than demonstrated against a coherent regional (or national) benchmark.
7. The September updates do not include a revised economic-benefits assessment or reconcile M.E's and Savvy's counterfactuals. They do not provide the missing demand, price, buyer, delivery, displacement, or comparative-cost evidence identified in my Original Report. The updates instead record continuing design development, a reduction in residential lots, matters remaining for detailed design, and proposed conditions that had not generally been revised at 10 September 2026.
8. The Local Government (System Improvements) Amendment Act 2026 (the 2026 Amendment Act), assented to on 17 September 2026, reinforces the materiality of the infrastructure-cost concerns in my Original Report. The Government describes those amendments as responding specifically to Fast-track projects that proceed ahead of infrastructure planning, bring forward network upgrades, use capacity planned for growth elsewhere, or create cross-boundary infrastructure costs. Those are substantially the types of economic effect identified at paragraphs 117–121 and 133 of my Original Report.
9. The amendments may affect who ultimately bears eligible infrastructure costs, but they do not change the amount of real resources consumed, nor demonstrate that development at Ōhoka has lower incremental infrastructure costs than the development likely to occur elsewhere without the Project. Cost incidence and net economic cost remain distinct questions, with the latter question key to assessing the Project's (net) benefits.

References: Original Report, paras 12, 32–47, 69–78, 93–100, 113–121 and 129–134; September Update Memorandum, paras 4–8 and 13–29; Local Government (System Improvements) Amendment Act 2026; New Zealand Government, "Development contributions strengthened to recover Fast-track infrastructure costs", 15 September 2026.

2. Response to Question 1 – Strategic Urban Form

2.1 Relevance of Strategic Urban Form to the Economic Assessment

10. Question 1 concerns the relationship between the proposal and the planned settlement pattern, and the effects of accommodating substantial growth at Ōhoka rather than in identified growth areas. I defer to the relevant planning experts on consistency with the Canterbury Regional Policy Statement, Greater Christchurch Spatial Plan, and district planning framework. My comments concern the economic consequences of locating growth at Ōhoka rather than at the locations from which it would otherwise be accommodated absent the Project.
11. As explained at paragraphs 38–47 of my Original Report, the relevant comparison is not the Project against an outcome in which its proposed dwellings, retirement units and commercial activity disappear. Demand for urban development normally relocates (as stated emphatically in

the quotes provided at para 40 of my Original Report, taken from a guide prepared for the then Ministry for the Environment on cost-benefits analysis for urban development). The economic comparison must therefore be between outcomes with the Project and the most likely mixture of development in existing zoned, consented, planned and Fast-track locations without it.

12. M.E acknowledges in footnote 3 on page 15 of its report that, if the dwellings were distributed elsewhere in the region, household expenditure would most likely have similar effects. Savvy goes further and treats displacement of growth from other locations as the more realistic counterfactual. Those matters support, rather than resolve, my criticism that M.E's gross construction, employment, household-spending, and commercial-centre impacts cannot be treated as wholly additional regional benefits.
13. M.E also acknowledges recent rezoning elsewhere in Waimakariri, but concludes that additional capacity at Ōhoka would provide further choice and competition. That is not an assessment of the likely without-Project development pattern, the amount of genuinely additional capacity, or the net differences between Ōhoka and the planned alternatives. It therefore does not cure the counterfactual problem identified in my Original Report.

References: M.E Report, pp. 12–15 and p. 15 n 3; Savvy Report, pp. 16–17 and 43; Original Report, paras 38–47, 55–60 and 113–121.

2.2 Displaced Growth and Comparative Costs

14. If the Project redirects growth from identified locations, the relevant assessment includes both the benefits gained at Ōhoka and the benefits and efficiencies forgone elsewhere. As set out in my Original Report, relevant differences may include utilisation of existing or planned infrastructure, timing of network upgrades, transport and accessibility, commercial-centre effects, and effects on schools and other community services.
15. The September updates contain additional assessments of whether the Project can be serviced, and of its design and environmental effects. They do not compare the lifecycle resource cost of servicing the revised Ōhoka proposal with the cost of accommodating the same households and activities in the likely alternative locations. Technical feasibility at Ōhoka does not answer that comparative economic question, which is central to assessment of the Project's (net) benefits.
16. The September Update Memorandum states that the revised scheme reduces residential lots from 879 to 856 and that the remaining civil-engineering plans will need to be updated to reflect the revised layout. It also records matters for refinement through detailed design in relation to wastewater, and revised demand calculations for water supply. These updates do not invalidate the qualitative conclusions in my Original Report, but reinforce the need not to treat the scale, cost and timing of Project outputs as fixed and certain.

References: Original Report, paras 113–121 and 129–133; September Update Memorandum, paras 5–8, 13–18 and 24–29; Appendix 17c, pp. 1–2; updated Appendix 29, sections 1.4–1.5 and 3.2.

3. Response to Question 2 – Housing Demand and Benefits

3.1 Location Specific Demand

17. The M.E Report relies on general Waimakariri population growth, house prices, affordability ratios, projected housing demand, and the desirability of greater housing choice. It also describes Ōhoka as strategically located between larger centres. This material may support a proposition that additional housing supply somewhere in Waimakariri has value. It does not demonstrate effective demand for the particular housing proposed at Ōhoka, at the prices and delivery rate required to support the claimed benefits.
18. The distinction matters because M.E's quantified assessment assumes 752 dwellings averaging 180 m² and 123 premium dwellings averaging 250 m², while acknowledging that details of the buildings are not known. Those assumed sizes are used to estimate construction expenditure; they are not evidence of committed housing products, sale prices, buyer segments, or absorption rates.
19. The revised masterplan and urban-design material provide more information on physical form and design rationale. According to the September Update Memorandum, those documents respond to landscape integration, urban form, settlement structure, accessibility, and related design matters. They do not supply the missing evidence identified at paragraphs 32–36 of my Original Report concerning housing typology, quality, price points, tenure, buyer origins, and the market segments expected to purchase or rent the dwellings.
20. Accordingly, the September material does not alter my earlier conclusion that the Analyses are illustrative rather than meaningful assessments of the Project's actual benefits and adverse impacts. General demand is not evidence that 856 residential lots, 250 retirement units and the assumed commercial floorspace can be delivered and absorbed at Ōhoka on the modelled timetable.

References: M.E Report, pp. 7–16; Original Report, paras 32–37; September Update Memorandum, paras 24–29.

3.2 Existing Zoned, Consented, and Fast-Track Capacity

21. M.E compares 875 proposed dwellings with projected medium-term urban growth of 5,600 dwellings and estimated urban residential capacity of 4,696 dwellings. It describes the Project as 15.6% of projected growth and an 18.7% increase in capacity. These are district-capacity comparisons. They do not demonstrate that the dwellings are additional to what would otherwise be supplied, or that the Project produces significant benefits at the Canterbury regional level required by section 3 of the FTAA.
22. The Panel now expressly asks about existing zoned, consented and Fast-track capacity elsewhere in Waimakariri and Greater Christchurch. That information is essential to resolving the counterfactual issue in my Original Report. The M.E Report mentions existing capacity and recent rezoning, but does not assess feasible delivery from that capacity, consented and Fast-track

supply, competing retirement-village capacity, or the extent to which those alternatives serve the same market.

23. Nor does the September material provide a reconciled position between M.E and Savvy. M.E's quantified impacts continue to depend substantially on treating Project activity as additional, while Savvy considers wholesale additionality unlikely and instead models displaced growth. As explained at paragraphs 42–44 of my Original Report, those are not minor differences: if one counterfactual is correct, the other cannot also be correct.
24. As such, it remains my opinion that the Applicant has not established how much, if any, of the capacity or resulting welfare gain is additional at the regional or national level. Without that step, the extent and significance of the claimed benefits cannot reliably be determined.

References: M.E Report, pp. 12–15; Savvy Report, pp. 16–17 and 43; Original Report, paras 38–47 and 93–100; Panel Minute, Appendix 4, question 2.

3.3 Certainty, Timing, and Nature of Benefits

25. M.E adopts an indicative ten-year build-out and estimates construction, employment, and value-added impacts on that basis. However, the application material identified in my Original Report did not contain a committed annual lot-release or dwelling-completion programme, housing prices, buyer take-up evidence, a retirement-village operator or delivery programme, or committed commercial-centre tenants and floorspace.
26. The September updates do not supply those matters. They revise physical and servicing documentation, but do not include an updated economic assessment or a probability-weighted programme for delivery and occupation of the proposed residential, retirement, or commercial capacity. Consent-enabled capacity is not the same as commercially feasible, completed and occupied capacity.
27. The revised scheme now contains 856 residential lots rather than the 875 dwellings assessed by M.E and the 879 lots referred to in the earlier scheme. M.E's housing-capacity percentages, household-spending estimates, and construction impacts have not been updated to the current scheme. The numerical difference is relatively insignificant, but confirms that the quantified assessment does not accurately describe the current proposal.
28. The same issue applies more strongly to the retirement village and commercial centre. Provision for 250 retirement units or a possible 9,390 m² commercial centre does not establish that those components will be built, when they will be built, or that they are additional to comparable capacity elsewhere. M.E's ongoing commercial impacts depend on assumed development and occupation of that floorspace, not merely its enablement.
29. My earlier conclusions concerning discounting, sensitivity analysis, and scenario analysis also remain applicable. The updated material does not test the economic conclusions against alternative delivery rates, degrees of displacement, dwelling types, price points, infrastructure costs, or commercial-centre take-up.

References: M.E Report, pp. 14–20; Original Report, paras 32–37 and 79–84; September Update Memorandum, paras 5–8 and 13–29.

3.4 Nature of Housing and Affordability Benefits

30. M.E links additional supply with improved affordability and competition. The direction of that effect is economically plausible, all else equal. However, the report does not quantify an expected reduction in section or dwelling prices, identify the price bands to be supplied, or demonstrate that the proposed product is directed to households facing the stated affordability constraint.
31. This remains material because a substantial part of M.E's assumed construction profile comprises large dwellings, including premium 250 m² homes on lots exceeding 2,000 m². Increased supply of such products may increase choice, but the application does not demonstrate the magnitude of any affordability benefit for households unable to purchase, for example, the median Waimakariri dwelling (or some other substantiated benchmark for affordability).
32. Similarly, M.E asserts increased land-market competition without estimating existing concentration, market power, monopoly rents, the resulting price reduction, or deadweight-loss reduction. The September updates do not provide that missing analysis. The claimed competition and affordability benefits therefore remain unquantified and their significance unsubstantiated.

References: M.E Report, pp. 12–14; Original Report, paras 32–36 and 54–68.

4. Resource Use and Economic Benefits

4.1 Why Expenditure, Employment, and Output Are Not Benefits Per Se

33. My Original Report explains that the resources used to construct and service the Project are not benefits merely because expenditure, employment, or output arise. Those measures describe economic activity and resource use. The Project's (net) benefits lie in the incremental welfare produced by the resulting housing and services, net of the opportunity cost of the resources used.
34. For housing, the relevant consumer benefit is principally the incremental value to occupants of the housing services and choices provided, over and above what they pay, and what they would receive in the without-Project scenario. Relevant producer benefits are incremental producer surplus accruing to New Zealand-owned businesses, not their gross turnover, wages, or input expenditure. Employment benefits must likewise be assessed net of workers' alternative earnings or other opportunity costs.
35. This is why displacement is decisive. If substantially the same dwellings would be constructed elsewhere in Canterbury, the Project does not create the whole of the construction expenditure, employment, or household spending recorded by M.E. It relocates much of that activity. Likewise, if two locations provide equivalent housing services but one requires more infrastructure, travel, and other resources, the greater resource use is an additional cost (i.e. disbenefit), not a reason to prefer that location.
36. The M.E Report's input-output analysis does not quantify incremental consumer surplus, New Zealand producer surplus, or the full market and non-market costs of obtaining those benefits.

This is illustrated in the following figure. M.E's multiplier results therefore do not answer the section 3 question of whether the Project delivers significant regional or national benefits.

Figure 4.1 – Demarcating Where Economic Impact Analysis Does or Does Not Inform Key FTAA Metrics (Relative to Cost-Benefit Analysis)

	Market Effects (for which economic values are based on market prices or assessments based thereon)	Non-Market Effects (for which economic values must be assessed – e.g. using non-market valuation techniques)
Benefits (cf FTAA s. 3).	EIA – can inform gross benefits, but only where assessed impacts are shown to be benefits per se (e.g., vs costs). CBA – directly informs.	EIA – does not inform. CBA – directly informs.*
Costs , disbenefits, opportunity costs, displacement effects (cf FTAA s. 3 – for <u>net</u> benefits). Adverse impacts (cf FTAA c. 85(3)).	EIA – does not inform (treats costs as benefits). CBA – directly informs.	EIA – does not inform. CBA – directly informs.*

* Qualitatively where reliable non-market values are not available, quantitatively where they are.

Source: The author.

References: Original Report, paras 14–31, 69–78 and 93–100; M.E Report, pp. 15–20.

4.2 Standing for Welfare Assessment, and Non Market Values

37. Section 3's focus on regional or national benefits also requires clarity about whose benefits count. From a New Zealand welfare perspective, relevant benefits may include incremental consumer surplus accruing to New Zealand citizens and residents, incremental producer surplus accruing to New Zealand-owned businesses, wages to New Zealand workers above their opportunity costs (i.e. above what they earn but for the Project), relevant net fiscal effects beyond just transfers, and market and non-market benefits enjoyed within New Zealand. Gross sales or expenditure do not measure those benefits, and any profits remitted to overseas owners (e.g. of materials or equipment suppliers) are not themselves New Zealand welfare gains.
38. My Original Report also explains that environmental, cultural and other non-market effects are not immaterial because no market price is observed. Under a total economic value framework, relevant values can include direct and indirect use, option, existence, and bequest values. Relevant Māori cultural frameworks may additionally recognise the mauri, relationships and standing of te taiao in ways not fully represented by conventional market measures.
39. The September updates include revised technical assessments and mitigation concerning waterways, ecology, landscape, groundwater, stormwater, and flooding. I do not offer new technical opinions on those matters. My earlier economic point remains that any residual effects and the resources used for mitigation are relevant to net benefits – i.e. expenditures that mitigate adverse impacts caused by the Project are not net benefits per se, since they only serve to

ameliorate adverse impacts that would not otherwise arise – and that a qualitative technical effects rating does not make their economic or cultural value zero.

References: Original Report, paras 25, 85–92 and 107–112; September Update Memorandum.

5. Related Appendix 4 Matters

5.1 Question 7 – Wastewater and Infrastructure

40. The updated wastewater and water-supply material is relevant to whether the Project is technically serviceable. According to the September Update Memorandum, the wastewater memorandum concludes that the approach is technically feasible, but identifies matters for detailed-design refinement, while the water-supply documents update demand for 856 lots and assess alternative sources.
41. That material does not resolve the economic criticism at paragraphs 117–121 of my Original Report. A conclusion that infrastructure can be provided does not establish that its capital, operating, renewal, resilience and failure costs are lower than the costs of accommodating the same development in planned alternative locations. Nor does it establish that all incremental costs are internalised by the Applicant or future residents.
42. The 2026 Amendment Act reinforces the relevance of this issue. Government material explaining the amendments identifies precisely the risks that a Fast-track development may proceed ahead of council infrastructure planning, bring forward a major network upgrade, consume capacity planned for growth elsewhere, or rely on infrastructure across council boundaries, which matters are central to assessing the Project's (net) benefits.
43. I understand that the new settings apply to Fast-track projects unless the applicant had already received a draft decision when the relevant provisions came into force. Whether and how the provisions apply to this Application is a legal matter on which I do not offer an opinion. Economically, however, any enhanced ability to recover costs changes their incidence, not the real resource cost or comparative efficiency of the Project.
44. If higher development contributions or other funding requirements materially affect lot prices, feasibility or delivery timing, they may also affect the certainty and magnitude of the housing benefits claimed by M.E. The Applicant's economic assessment does not test that interaction.

References: Original Report, paras 117–121 and 133; September Update Memorandum, paras 13–18; Appendix 28a; Appendix 17c; updated Appendix 29; Local Government (System Improvements) Amendment Act 2026; New Zealand Government, "Development contributions strengthened to recover Fast-track infrastructure costs", 15 September 2026.

5.2 Question 8 – Transport

45. My Original Report identifies transport pressures during the ten-year construction phase, and the need to account for transport differences between Ōhoka and the locations from which growth is displaced. The September transport update responds to subdivision road design and related Council feedback. It does not undertake the comparative welfare assessment identified in my

Original Report (illustrating why economic analysis of adverse impacts is needed in addition to technical analyses of such impacts, particularly to comprehensively and consistently assess Project (net) benefits).

46. Any quantified changes in travel time, vehicle operating costs, safety, or emissions identified by transport experts can be valued using established economic methods. The relevant comparison remains Ōhoka against the likely alternative development pattern, including the retirement village, school, and commercial-centre trips. I do not provide new transport estimates in this memorandum.

References: Original Report, paras 126–128 and 133; September Update Memorandum, paras 5–8.

5.3 Question 9 – Staging Cost Allocation, and Long Term Liabilities

47. Stage-linked triggers may reduce delivery and fiscal risks, but they cannot establish location-specific demand, regional additionality or significant net benefits. Nor is it sufficient to test whether Ōhoka, viewed in isolation, crosses an infrastructure threshold at the time each stage proceeds.
48. Where several developments can use the same network capacity, the relevant assessment must account for existing demand, consented but not connected development, programmed growth, other Fast-track capacity, and reasonably foreseeable concurrent development. Otherwise, a project-specific condition may effectively allocate scarce shared capacity to the first development to exercise its option, without recognising the opportunity cost imposed on other planned growth.
49. Accordingly, any staging framework should be informed by system-wide cumulative capacity and upgrade requirements, not solely by the incremental demand of the next Ōhoka stage considered separately. This is the same economic principle underlying my Original Report’s concern that the Project may consume capacity intended for growth elsewhere, or bring forward infrastructure expenditure.
50. The September Update Memorandum records that proposed conditions had not generally been revised at 10 September, and were intended to be refined after section 53 comments. Nothing in the updated material therefore displaces the need to address cumulative capacity, operational delivery of required works, lifecycle responsibility, and allocation of costs before relevant stages proceed.

References: Original Report, paras 117–121 and 129–133; September Update Memorandum, para 4 and paras 13–23; Panel Minute, Appendix 4, question 9.

5.4 Questions 3 to 6 – Environmental Effects

51. Questions 3–6 are primarily matters for the relevant hydrology, engineering, ecology and planning experts. Their conclusions may affect the magnitude, likelihood and duration of Project costs. I do not reassess those technical matters here.
52. The economic point in my Original Report remains applicable: residual groundwater, waterway, wetland, flooding, ecological, and cultural effects are potentially relevant non-market costs, while

mitigation, monitoring, and adaptive-management measures consume resources. Those matters do not cease to be economic costs relevant to assessing the Project's (net) benefits simply because they are assessed qualitatively or addressed outside the M.E input-output model.

References: Original Report, paras 85–92, 107–112 and 122–125; September Update Memorandum, paras 9–12 and 19–37.

6. Overall Conclusion

53. The September updates do not resolve the fundamental deficiencies identified in my Original Report. No revised economics assessment has been provided to reflect the current 856-lot scheme, the evolving infrastructure and design material, or the Panel's questions concerning alternative capacity, location-specific demand, and delivery certainty.
54. The Applicant material closest to those matters establishes, at most, general housing demand, possible physical capacity, and the technical feasibility of servicing the site. It does not establish how much development is genuinely additional, which market segments will purchase the proposed products at the required prices, when the residential, retirement, and commercial components will be delivered, or how the Project compares with the development likely to occur elsewhere.
55. M.E's quantified construction, employment, output, and household-spending impacts therefore remain measures of gross activity under an inadequately specified counterfactual. They do not measure the incremental consumer, New Zealand producer, and non-market benefits required for a net-benefit assessment, and they do not deduct the opportunity cost of the resources used or the benefits and efficiencies forgone elsewhere.
56. The 2026 Amendment Act does not resolve those shortcomings. It reinforces that out-of-sequence Fast-track development can create infrastructure costs not captured by existing funding arrangements, use capacity planned for other growth, and bring forward network upgrades. Greater recovery from the Applicant may protect ratepayers, but does not reduce the Project's real resource cost or demonstrate comparative economic efficiency as required for assessing the Project's (net) benefits.
57. For these reasons, my conclusion at paragraph 134 of my Original Report remains unchanged: the Applicant's economic analyses do not credibly or robustly substantiate significant regional or national benefits. The updated application material does not provide a basis for revising that conclusion.

Richard Meade (PhD, Toulouse School of Economics)
Principal Economist, Cognitus Economic Insight

IN THE MATTER AND IN THE MATTER	of the Fast-track Approvals Act 2024 (FTAA) of an application for approvals under the FTAA for the Proposed Ōhoka Residential Subdivision
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STATEMENT OF EVIDENCE OF DR RICHARD BRENT MEADE

9 July 2026

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1. Introduction

1.1 Scope of this Evidence

1. I have been asked by Environment Canterbury to assess the economic analysis (**the M.E Analysis**) provided by M.E Consulting, and further economic analysis (**the Savvy Analysis**; together, **the Analyses**) provided by Savvy Consulting, on behalf of Carter Group Limited (**the Applicant**) in support of the proposed Ōhoka Residential Subdivision application (**the Application**) under the Fast-track Approvals Act 2024 (**FTAA**) for the development of a proposed residential subdivision, retirement village, and commercial centre at Ōhoka in Canterbury (**the Project**).
2. In particular, I have been asked whether, in my opinion as an expert economist, the M.E Analysis and Savvy Analysis, either individually or together, credibly and robustly demonstrate the extent of the Project's regional or national benefits, and whether there are material adverse impacts arising from the Project either not addressed or inadequately accounted for in the Analyses. I have also been asked to provide my opinion on the significance of the Project's regional or national benefits.

1.2 Background, Experience and Code of Conduct

3. I am a professional economic consultant and researcher with 34 years' experience in providing economic and financial analysis and advice. My primary professional role is as Principal Economist at Cognitus Economic Insight, an economic consulting and research practice I founded in 2002. Since 2023, I have been an Adjunct Associate Professor at Griffith University, and was appointed a Lay Member of the High Court for Commerce Act matters in 2024. In June 2025, I retired after being on the organising committee of the Law & Economics Association of New Zealand for 10 years, having been president for three years, and Auckland vice president for six years.
4. Prior to founding Cognitus, I was an investment banker with Credit Suisse First Boston (1992-1998), through which I was a valuation and corporate finance specialist. I have also taught undergraduate and MBA finance and/or corporate finance for Victoria University of Wellington in New Zealand and Hong Kong multiple times, and completed a graduate-level course in finance as part of my PhD (further details below).
5. I have also been a Research Principal at the New Zealand Institute for the Study of Competition and Regulation (2001-2011), and a Senior Research Fellow at Auckland

University of Technology (2015-2025). In addition to teaching finance or corporate finance, I have also lectured in industrial organisation and/or environmental economics at Auckland University of Technology and University of Auckland multiple times.

6. Since 1992, I have provided independent advice to 10 iwi/tribes, or groups of iwi, in negotiations with the Crown for settlements of historical claims arising from Crown breaches of the Treaty of Waitangi, including the landmark Ngāi Tahu settlement. I have also provided independent expert advice for multiple other Māori organisations, and government agencies in relation to Māori matters, on a range of policy and commercial matters.
7. I hold the following qualifications: a PhD (awarded with Distinction) in industrial organisation and regulation, as well as an MPhil and MSc in economic theory and econometrics, all from Toulouse School of Economics. I also hold a BSc (Hons, First Class) in statistics and operations research (including papers in economics and finance), a BSc in statistics and operations research, and a BCA in economics and finance, all from Victoria University of Wellington.
8. I belong to multiple professional and academic associations, including the Law & Economics Association of New Zealand (Member), Competition Law & Policy Institute of New Zealand (Member), Asia-Pacific Industrial Organisation Society (Member), New Zealand Association of Economists (Member), the New Zealand Institute of Forestry (Ordinary Member), and the Australian Centre for International Commercial Arbitration (Associate Member).
9. Relevant examples of my work for this exercise include:
 - 9.1. Assessing economic evidence provided in support of other applications under the FTAA, including for the Waihi North and Bendigo-Ophir gold-mining applications, the Te Ākau Bream Bay sand-mining application, the Whiterock Class 3 managed fill application, the Delmore and Sunfield housing applications, and the Stella Passage port expansion application;
 - 9.2. Undertaking numerous and often-times complex financial evaluations;
 - 9.3. Applying the total economic value (**TEV**) framework for describing and categorising the full range of economic values that attach to a given activity or resource, and also non-market valuation (**NMV**) techniques for ascribing monetary values to product or service attributes that are not traded in markets and hence which lack identifiable market prices; and
 - 9.4. Providing expert economic evidence (including for multiple landmark cases) in the High Court, Waitangi Tribunal, and Environment Court.

10. I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses (**the Code**), and have complied with it in the preparation of this evidence. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing, directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.

1.3 Documents Reviewed

11. In preparing this evidence, I have reviewed the following documents:
- 11.1. A report prepared by M.E Consulting for the Applicant dated 21 May 2026, *Economic Assessment – Ōhoka Residential Subdivision* (**M.E Report**);
 - 11.2. A report prepared by Savvy Consulting dated June 2026, *Assessment of Economic Costs: Proposed Ōhoka Residential Subdivision* (**Savvy Report**);
 - 11.3. A report prepared by Novo Group dated June 2026, Fast-track Approval Application: Resource Consent Applications, Wildlife Act Permit & Archaeological Authority prepared for Carter Group Limited – *Ōhoka Residential Subdivision* (**Novo Application Report**);
 - 11.4. A report prepared by Reeftide dated 20 May 2026, *Ohoka Fast Track Application – Assessment of Potential Loss of Productive Land* (**Reeftide Report**);
 - 11.5. A report prepared by Inovo dated 11 June 2026, *Infrastructure Report: Mill Road, Ōhoka – Fast Track Application* (**Inovo Report**);
 - 11.6. A report prepared by Novo Group dated May 2026, *Integrated Transport Assessment prepared for Carter Group Limited: 531-535 Mill Road & 347 Whites Road, Ōhoka Waimakariri* (**Novo Transport Report**);
 - 11.7. A report prepared by Pattle Delamore Partners dated 3 June 2026, *531 & 535 Mill Road Residential Development Project – Lizard Management Plan* (**Pattle Report**);
and
 - 11.8. Other documents and materials as referenced throughout this statement of evidence.

1.4 Summary of Main Conclusions

12. In the following sections I set out my detailed assessment of the Analyses. By way of summary, it is my opinion that:

- 12.1. The FTAA requires a clear assessment of whether the Project delivers net benefits to New Zealand's social welfare once all costs (including opportunity costs), disbenefits, and adverse impacts are accounted for. In economic terms, this necessitates a cost-benefit analysis (**CBA**), rather than economic impact analysis (**EIA**).
- 12.2. The Analyses rely exclusively or primarily on EIA, which assesses Project impacts – not Project benefits as required under s. 3 of the FTAA – and which is known to overstate impacts.
- 12.3. Critically, the Analyses provide insufficient detail to meaningfully assess the Project's impacts (let alone its benefits) – in particular, insufficient detail is provided regarding both the types of housing and other capacity proposed, and the market segments intended to be catered to by the Project.
- 12.4. Equally critically, the Analyses assume diametrically opposite counterfactuals (i.e. assumptions regarding the outcomes that arise absent the Project, against which Project outcomes are compared to arrive at Project impacts/benefits) – this means that if the counterfactual for one of the Analyses is correct, then it is incorrect for the other of the Analyses, so the Analyses taken together cannot be reliable.
- 12.5. The M.E Analysis relies on various FTAA s. 22 referral criteria to demonstrate significant Project benefits, despite s. 81(4) of the FTAA requiring panels to determine the extent of project benefits, and despite the Project – being an out-of-sequence development that displaces in-sequence development – not being consistent with local or regional planning documents, including spatial strategies, as required under s. 22(2)(a)(x).
- 12.6. Many of the qualitative Project benefits claimed in the M.E Analysis do not withstand even minimal scrutiny.
- 12.7. The quantitative Project impacts assessed in the M.E Analysis untenably assume that all of the housing and other capacity proposed by the Project is strictly incremental when I (and Savvy) consider it more realistic that the Project will displace housing

and other capacity growth elsewhere – this alone (in addition to EIA inherently overstating impacts) means the M.E Analysis vastly overstates the Project's impacts.

- 12.8. The M.E Analysis further does not account for all relevant Project costs, opportunity costs, or adverse impacts, which also means its assessed Project impacts are overstated.
- 12.9. The M.E Analysis does not follow standard modelling practice by converting impacts that arise over time into their present value, or by showing how sensitive assessed impacts are to changes in key input variables, allowing for relevant Project uncertainties.
- 12.10. Even in gross and overstated terms, the Project impacts assessed in the M.E Analysis are immaterial at a regional level (and hence also the national level).
- 12.11. While the Savvy Analysis partially remedies the M.E Analysis' omissions of Project costs, opportunity costs, and adverse impacts, it inherently understates those adverse impacts/costs due to:
 - 12.11.1. Misapplying RMA framing to consider only certain market costs of commercial centre displacement effects; and
 - 12.11.2. Primarily applying EIA to assess Project adverse impacts/costs, but omitting material market and non-market adverse impacts/costs – despite non-market impacts being routinely monetised in assessments of major public projects, and relied upon as benefits by applicants' economists in other FTAA applications.
- 12.12. In particular, the Savvy Analysis fails to account for, or only partially accounts for:
 - 12.12.1. The costs of the Project displacing housing and other capacity growth elsewhere (rather than representing incremental growth);
 - 12.12.2. Likely incremental infrastructure costs; and
 - 12.12.3. Likely significant market and non-market costs associated with the Project's required lizard management plan.

- 12.13. Additionally, the Savvy Analysis does not account for social costs arising during the Project's expected 10 year construction phase (e.g. pressures on transport networks, housing, health and education facilities, other community facilities).
- 12.14. Finally, the Savvy Analysis acknowledges but does not quantify other adverse impacts/costs of the Project, including possible loss of school or healthcare capacity in communities from which housing and other capacity demand due to the Project is assumed to be displaced.
- 12.15. In conclusion, the gross impacts of the Project are significantly overstated in the M.E Analysis, while the Project's adverse impacts/costs are significantly understated in the Savvy Analysis:
- 12.15.1. Since the Project's gross impacts (versus benefits) – even though they are significantly overstated – are not significant at either the regional or national level, its net impacts (versus benefits) after allowing for Project adverse impacts/costs – even though those adverse impacts/costs are significantly understated – are even less significant at either the regional or national level.
- 12.16. As such, the Analyses do not substantiate significant regional or national benefits due to the Project as required under s. 3 of the FTAA.

2. Comprehensive Cost-Benefit Analysis Required, Not Economic Impact Analysis or Only Partial Cost-Benefit Analysis

2.1 Overview

13. In this section I:
- 13.1. Explain why I understand the FTAA to require a comprehensive (not selective or partial) CBA of the Project's net benefits, accounting for both market and non-market benefits and costs; and
- 13.2. Explain why EIA of the sort used in the Analyses, which assesses the Project's "impacts" rather than its "benefits", is inappropriate, and how reliance on project "impacts" can result in projects being approved that lessen social welfare/wellbeing – i.e. result in disbenefits at a regional or national level.

2.2 Cost-Benefit Analysis Framework

14. I understand the framing of the FTAA to require a CBA, since the focus of s.3 is on projects that deliver significant regional or national “benefits”:

14.1. By any interpretation, a regional or national “benefit” is something that makes a region or the nation “better off” in some sense – which is what “social welfare” in the CBA framework captures:

14.1.1. By contrast, impacts identified using EIA may or may not make a region or the nation better off, and do not do so comprehensively (since EIA’s focus is on “market economy” impacts only – it ignores “non-market” considerations altogether, as discussed further in Section 5.9 below).

15. It follows that s. 3 must be focusing on projects that deliver positive net benefits (since if a project’s net benefits are negative, then by definition the project is not beneficial):

15.1. By construction, EIA does not weigh benefits against costs, and can even conflate them by counting costs as relevant impacts (making it impossible in that case to determine net benefits).

16. These features alone point to the FTAA requiring some form of CBA (and not EIA, except as below) – it requires a comparison of project (gross) benefits (things that make a region or the nation better off) with project costs (things that make a region or the nation worse off), with the difference between the two measuring the extent to which the project generates net “benefits”:

16.1. I understand s. 85(3) of the FTAA to support this interpretation, requiring a consideration of a project’s adverse impacts, which under the standard CBA framework – if applied comprehensively – would naturally be incorporated (including non-market impacts), either quantitatively if possible or qualitatively otherwise;

16.2. Either way a Panel, as for any CBA, is able to weight relevant costs and benefits as it considers appropriate, and a formal CBA systematically transparently sets out all relevant costs and benefits, which helps to avoid omissions or double-counting.

17. Notably, the s. 3 focus is on “benefits” – if Parliament had intended that s. 3 should instead focus on “impacts”, “GDP impacts”, “GDP”, “economic impacts”, or “economic activity”, I would have expected it and the FTAA to have said so:
- 17.1. These other measures are only pertinent if and to the extent they measure “benefits” – i.e. things that improve social welfare;
- 17.2. Impacts or activity are not necessarily beneficial – e.g. socially-harmful activities like illegal drug supply – this implies a need to establish how impacts or activity improve social welfare (whereas by definition “benefits” in a CBA are necessarily things that improve welfare).
18. From an economic perspective, that naturally favours CBA, and not EIA, especially if “impacts” include costs, which favours inefficient projects over comparable but efficient ones.
19. I note that the FTAA does not specifically require or mandate CBA, but I understand that it does so in effect due to its framing (as above), with CBA in any case an economically coherent and systematic framework that directly aligns with the s. 3 focus on “benefits”, and which also informs s. 85(3) assessments (without precluding panel weighting, and helping to avoid omissions or double counting):
- 19.1. By contrast, in my opinion EIA is inconsistent with FTAA requirements unless it speaks directly to assessing net benefits – since it is not complying with the s. 3 focus on “benefits” otherwise.
- 19.2. EIA is remote from s. 3 “benefits” focus, and therefore needs to demonstrate how impacts are benefits, and properly distinguish costs from benefits, whereas CBA directly aligns with that focus.
20. In summary, the FTAA’s focus on project “benefits” (net of monetary project costs and other monetary disbenefits), suitably weighed against project adverse impacts (including, among other things, non-monetary costs), necessarily requires an assessment of how that project enhances New Zealand’s social welfare/wellbeing (at a regional or national level), since if a project does not increase social welfare/wellbeing, then in economic terms it is not beneficial at an aggregated (i.e. regional or national) level:
- 20.1. I note that my conclusion, that the FTAA requires a CBA and not an EIA to assess a project’s (net) benefits, has been echoed in a recent article by two other prominent

New Zealand economists, Dr Timme Denne of Resource Economics, and Dr Adolf Stroombergen of Infometrics.¹

21. I further note that the M.E Report regularly refers to the Project's "benefits", but in fact, due to the M.E Analysis' use of EIA, the only quantification the M.E Report provides is in terms of the Project's economic impacts:

21.1. Moreover, the M.E Report makes it clear that the bulk of these impacts is based on the direct costs of completing the Project,² and indirect and induced impacts flowing from those costs being incurred – this means the M.E Analysis is characterising costs as benefits, which is inconsistent with a social welfare interpretation of "benefits" (given social welfare is reduced by costs, not increased by them, since economies have limited resources with which to achieve their desired outcomes).

2.3 Focus on Benefits – Not Impacts – Essential for Assessing Whether Projects Improve Social Welfare/Wellbeing

22. Elaborating on the above discussion, following Treasury guidance, and based on my own assessment – for the purposes of sound economic decision-making – any assessment of whether the Project gives rise to significant regional or national benefits as required under the FTAA necessarily requires a CBA, and not an EIA (and partial CBA) as provided in the Analysis (discussed further below):

22.1. Such a CBA measures the net benefits of an undertaking like the Project, being the total incremental benefits of the Project, less its total incremental costs (including opportunity costs, and both indirect costs and benefits as well as direct ones),³ appropriately adjusted for time and risk, and allowing for any salient distributional impacts.⁴

¹ <https://www.rmla.org.nz/rmla-insights/benefits-analysis-under-the-ftaa>.

² M.E Report, at Section 4.1.4.

³ See, for example, the categories of costs and benefits arising from urban development as set out in MRCagney, 2019, *The costs and benefits of urban development*, final report prepared for the Ministry of the Environment, at Table 4.

⁴ For example, distributional impacts of urban developments on house prices and rents are identified as relevant for urban development CBA in MRCagney, 2019, *The costs and benefits of urban development*, final report prepared for the Ministry of the Environment, at Table 4 and Appendix 11.

23. By contrast, EIA purports to measure the economic impact of the Project, not its benefits (and hence not its contribution to social wellbeing) *per se* – including by treating Project costs as benefits, even if national wellbeing could be improved by allocating fewer resources elsewhere:⁵
- 23.1. The classic example of EIA indicating a benefit, when society is not in fact made better off by the relevant activity, is paying a person to dig a hole and then pay them to fill it in again;
- 23.2. This is counted as a gain under EIA – two payments of wages – but not under CBA – wage costs are incurred for a socially pointless activity, when the relevant labour resources could have been used for socially beneficial activities elsewhere in the economy at the same wage cost.
24. Indeed, Treasury argues for the use of CBA as follows:⁶
- 24.1. “[A]ll advice that is aimed at helping decision-makers make a decision, should adopt a CBA framework as an organising principle”; and
- 24.2. Investment in systematic CBA is justified whenever decisions impact on large numbers of people.
25. By contrast, Treasury notes the following additional shortcomings of EIA (which measures components of GDP):⁷
- 25.1. It does not measure social welfare *per se*;
- 25.2. It makes no inherent distinction between economic impact accruing to local parties and economic impact accruing to overseas parties – i.e. it fails to identify whether project impacts accrue to New Zealand (as is required by “significant regional or national benefits”) or to overseas parties (about whose welfare the FTAA appears to be unconcerned);
- 25.3. It ignores non-market effects, which can be socially important; and

⁵ Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 54.

⁶ Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 39.

⁷ Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 47.

- 25.4. It offers no insight as to any distributional concerns – i.e. whether resources are allocated to groups deemed in need of greater access than others.⁸
26. Treasury concludes that “EIA can provide useful contextual information for decision-makers, but it is not suitable as a tool for measuring the balance of costs and benefits of a decision to society”⁹ [emphasis added]:
- 26.1. This appears highly pertinent to assessing FTAA applications.
27. To Treasury’s list I would also point out that EIA typically focuses on only gross Project “market” (versus “non-market”) economic impacts – see Section 5.9 below for further discussion – and as such does not account for adverse Project economic impacts (whether market or non-market) or non-market Project benefits for that matter. Hence EIA is inherently partial in its coverage, whereas CBA, if applied properly, captures all relevant positive or negative project effects:
- 27.1. Furthermore, as above, EIA can even treat adverse project impacts as benefits – e.g. by treating expenditures to remediate adverse impacts as desirable Project impacts – such as due to requiring expenditures on capital, labour or other inputs (whereas in CBA terms such expenditures would be counted as costs incurred to mitigate the social costs of the relevant adverse impacts, with any such mitigation counting as a social benefit).
28. By way of illustration, if an oil spill creates \$10m in non-market social costs (e.g. environmental harms not directly affecting market economic activity), but those social costs are halved by spending \$1m on cleanup, then CBA counts the cleanup costs as a cost, while recording a reduction in the oil spill social costs of \$5m (still counting the remaining unremedied \$5m of the spill’s social costs as an outstanding social cost):
- 28.1. EIA by contrast ignores the social costs of the spill (whether pre- or post-cleanup), but counts the expenditure on cleanup as a positive economic impact – as if a social welfare gain has been enjoyed due to the oil spill, when in net terms society bears \$5m in unmitigated social costs, and spent \$1m of resources that could have been

⁸ This latter issue can be partially addressed through an alternative approach involving a social accounting matrix (**SAM**), which the Analysis does not apply.

⁹ Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 39.

used elsewhere for social benefit (e.g. spending on health, education, infrastructure, etc).

29. As such, failing to assess the Project in terms of its net social benefits under a CBA framework risks misallocating national resources, with purported regional or national benefits potentially being lower – and distributed more inequitably – than what could be achieved through more efficient and equitable use of resources (as might be identified using CBA).
30. I consider a full CBA of the Project to be feasible, and warranted given its identified and likely adverse impacts (discussed further in Section 6 below).
31. A hypothetical example further illustrates how relying on project impacts rather than project benefits can lead to a reduction in social welfare/wellbeing – i.e. negative project benefits, or net project disbenefits (either way, failing to achieve the FTAA's purpose). Specifically, if two housing development projects deliver exactly the same housing benefits, but one of them involves twice the employment level of the other (e.g. in the construction phase):
 - 31.1. EIA would suggest that the project with the higher employment level is to be preferred due to having larger employment impacts – yet the other project is by assumption twice as labour-efficient, since it can deliver the same housing benefits with only half the required employees (also meaning that the extra employees required to deliver the less efficient project could be deployed elsewhere in the economy, and thereby generate even further benefits for the region or nation);
 - 31.2. A CBA would prefer the project that delivers the given level of housing benefits with the lower required workforce, and lead to better overall economic outcomes – i.e. would deliver greater economic “benefits” as required for FTAA purposes, if not higher economic “impacts” (as measured by EIA).

3. Inadequate Project Detail Provided to Meaningfully Assess Benefits or their Significance

32. In my opinion a critical limitation of the Analyses is that it is impossible on the information they present to assess:
 - 32.1. What types of housing the Project proposes to provide;

- 32.2. What the pricing points of those houses will be – e.g. will the houses be offered at prices above or below market prices for comparable offerings;
- 32.3. Whether the houses will be bought by owner-occupiers or investors for rental or short-term letting (e.g. Air BnB); or
- 32.4. Where buyers (or renters) of the new housing will be coming from – including whether they will be local buyers/renters, other New Zealand buyers/renters, or buyers/renters from overseas?
33. These details are critical for assessing the Project’s benefits and any adverse impacts – e.g. is the proposed housing catering to:
- 33.1. A currently under-served market segment, and offering greater affordability due to selected housing typology and construction techniques (and in respect of which developer profit margins are likely to be slimmer, due to buyers’ lower ability to pay if they are facing affordability issues); or
- 33.2. A currently better-served segment for whom affordability is less of an issue (and in respect of which developer profit margins are likely to be higher, due to buyers’ greater ability to pay).
34. The M.E Report assumes average dwelling sizes of 180 m² on 752 sub-2000 m² lots, and 250 m² on 123 lots of greater than 2,000 m²:¹⁰
- 34.1. However, it is unclear whether these are what the Applicant is actually proposing, or just an assumption made by M.E Consulting; and
- 34.2. Moreover, no details are provided regarding the quality or pricing points of the relevant housing typologies – details which are fundamental to assessing what market segments the proposed homes will cater to (and hence from where any buyers might be drawn), and also to the affordability of those homes.
35. The Savvy Report assumes that the proposed development will reallocate growth from neighbouring rural and small urban areas that are “indicative of locations where

¹⁰ M.E Report, at p. 16.

households seek to live near main urban areas, but not in them,” and which are in “commuting distance of Rangiora, Kaiapoi and Christchurch”;¹¹

- 35.1. While these details hint at possibly relevant housing typologies, they leave questions of quality, pricing points, and affordability fundamentally unresolved; and
- 35.2. As for M.E’s assumptions, it is not clear that Savvy’s assumptions align with those of the Applicant, or are just assumptions adopted for modelling purposes.
- 36. Either way, neither the M.E Report nor the Savvy Report together or alone provide sufficient detail to understand precisely what the Applicant is proposing, and as such it is therefore impossible – including for M.E Consulting or Savvy Consulting – to meaningfully assess the Project’s benefits or adverse impacts:
 - 36.1. As such, the Analyses can only be treated as illustrative, and not in any way meaningful assessments of what the Project’s actual benefits or adverse impacts are likely or expected to be;
 - 36.2. In turn this means it is impossible on the information provided to assess the significance of the claimed Project impacts (let alone benefits).
- 37. Noting this critical limitation, my assessment of the Analyses proceeds on the basis of the limited information they provide.

4. Counterfactuals in M.E and Savvy Analyses are Contradictory

- 38. Another critical limitation of the Analyses arises in terms of their assumed “counterfactuals”:
 - 38.1. In economic analysis, a counterfactual describes the economic outcomes arising if the project in question does not proceed (i.e. the outcomes arising in the “without” scenario);¹²

¹¹ Savvy Report, at p. 17.

¹² Importantly, economists use “counterfactual” as a noun, representing something of fundamental importance. In other disciplines, “counterfactual” is sometimes used as a pejorative adjective – i.e. describing something that is inconsistent with fact. The economic sense of the term is different to this latter sense.

- 38.2. The counterfactual is critical for assessing the relevant project's contribution to social welfare (or whatever other performance metric is adopted), since that contribution is measured as the difference between the outcomes arising "with" the project, less the outcomes arising "without" the project.
39. It should therefore be clear that a wrongly specified counterfactual will result in an incorrect assessment of the relevant project's economic contributions.
40. More specifically, in a guide prepared for Ministry for the Environment (MfE, since 1 July 2026, MCERT) on CBA for urban development, the required counterfactual for an urban development like the Applicant's is described as follows:¹³

"Compared to what?"

"... 'what would happen instead if urban development did not occur in a specific location?' That is, what counterfactual scenario are we comparing development against?"

"Demand for housing, and demand for urban places, is like a waterbed. If you push it down in one corner, the displaced water will just pop up elsewhere. By analogy, demand for development that cannot be met in one location for whatever reason does not simply disappear – rather, it displaces to other locations instead.

"Assumptions about what the counterfactual locations are can affect our conclusions about whether urban development in a particular location leads to net societal costs or net societal benefits." [emphasis added]

41. That guide further explains:¹⁴

"For instance, consider an attempt to assess the costs and benefits of developing new 'greenfield' suburbs on previously non-urban land near Auckland. This will lead to a variety of effects, such as consumption of open space / agricultural land, increased travel demands, and various benefits and costs for the people living in new homes.

"If this development did not proceed, then there are a few things that could happen instead:

- People who would have otherwise lived in the new greenfield suburb would stay in Auckland and live in new 'infill' housing in existing suburbs

¹³ MRCagney, 2019, *The costs and benefits of urban development*, final report prepared for the Ministry of the Environment, at p. 14.

¹⁴ MRCagney, 2019, *The costs and benefits of urban development*, final report prepared for the Ministry of the Environment, at p. 15.

- They would move to other urban areas in New Zealand, such as Hamilton or Whangārei
- They would move to non-urban areas in New Zealand, for instance a lifestyle block in Western Bay of Plenty
- They would leave New Zealand and move to, say, Brisbane or Perth instead
- Lastly, in the absence of development some people may simply be unable to find housing and may end up living in overcrowded dwellings, temporary accommodation, or sleeping rough.

“Each of these alternatives would lead to different types of costs and benefits. ...”

42. The critical limitation regarding the counterfactuals assumed in the Analyses is that they are contradictory and polar opposites:

42.1. The M.E Report does not explicitly state its assumed counterfactual (which of itself is a critical omission for any economic analysis), but the M.E Analysis implicitly assumes that all of the proposed development is entirely incremental – i.e. if the Project does not proceed, then the proposed housing, retirement village capacity, and commercial centre (including retail demand/spending) will not arise anywhere else in either the region or the New Zealand economy;¹⁵

42.2. By contrast, the Savvy Report considers two counterfactuals, one in which the Project results in a certain amount of net incremental housing capacity (which the Savvy Report says “is not considered likely or realistic”), and another preferred counterfactual in which the Project displaces housing demand growth by reallocating it from neighbouring rural and small urban areas.¹⁶

43. The M.E Report’s implicitly assumed counterfactual is clearly untenably strong, especially given the lack of detail regarding housing typologies and expected buyer market segments discussed in Section 3:

43.1. In effect, despite this lack of detail, the M.E Analysis assumes that there are New Zealanders who are currently unhoused who will become housed if the Project proceeds – or alternatively, New Zealanders or non-New Zealanders currently living overseas will relocate to Ōhoka to live – and retail spending that is not currently

¹⁵ This is despite the M.E Report noting at p. 19 that the Savvy Report assumes a counterfactual in which housing demand accommodated by the Project would be accommodated elsewhere in the district if the Project did not proceed. The M.E Analysis is neither consistent with that counterfactual, nor describes its own assumed counterfactual (let alone attempts to reconcile the two).

¹⁶ Savvy Report, at pp 16-17 and 43.

being made will likewise arise if the Project proceeds (without explaining the source of that extra spending);

43.2. Neither of these assumptions is tenable in principle, and certainly not substantiated or justified in the M.E Analysis.

44. This is not a “technical” matter, nor a case of slightly inconsistent counterfactuals – it is a fundamental matter of first-order importance due to an outright clash between the assumed counterfactuals:

44.1. If one of the counterfactuals assumed in the Analyses is correct, then as a matter of logic the other cannot be, with obvious implications for what reliance can be placed on the combined conclusions of the Analyses.

45. More realistically, in relation to employment impacts claimed due to the Project, the M.E Report suggests that those impacts relate to the Project providing greater certainty (not quantum) of work for the region’s construction sector:¹⁷

45.1. However, even in that case the M.E Analysis fails to account for the Project likely resulting in employment displacement rather than incremental work, and ignores employees’ opportunity costs (as discussed further in Section 5.6 below); and

45.2. The employment impacts claimed for the Project in the M.E Report are not in relation to such greater work certainty – instead, they are valued in terms of gross full-time equivalent workers (implicitly and untenably assuming that those workers would be entirely idle, and not value their leisure time, over the entire duration of the Project’s assumed 10 year construction phase).

46. In my opinion, and consistent with the passages of the guide prepared for MfE on CBA for urban development discussed above, it is more plausible to assume that the Project will relocate (i.e. displace) housing demand from other parts of the region or nation (and maybe, to a very minor extent, attract demand from New Zealanders or non-New Zealanders relocating to Ōhoka from overseas, with the welfare benefits to such non-New Zealanders not obviously of interest for FTAA regional or national benefit purposes):

¹⁷ M.E Report, at p. 17.

- 46.1. This is because treating the Project's new housing capacity as entirely incremental assumes – implausibly in my opinion – that:
- 46.1.1. There are currently unhoused New Zealanders who will somehow be able to afford – and wish – to buy or rent new housing in Ōhoka (and not new or existing housing elsewhere in the country); or
- 46.1.2. New Zealanders living overseas will relocate to Ōhoka (and not to new or existing housing elsewhere in the country) if the Project proceeds.
47. On that basis, I find the M.E Report counterfactual to be untenable, and the Savvy Report counterfactual more plausible:
- 47.1. However, even in that case, it is not clear to me why – and the Savvy Report does not explain why – demand for new housing in Ōhoka would not be drawn from nearby urban centres, such as Kaiapoi, Rangiora or Woodend, or indeed from Christchurch (where average house prices are much higher than in Waimakariri).¹⁸
48. Indeed, it seems to me equally – and even more – plausible that the Project will indeed mainly displace housing demand from other areas, but I would expect that displacement to be more in the nature of people with smaller and more expensive urban housing relocating to Ōhoka either because:
- 48.1. Housing costs for the Project's homes are lower – though no evidence has been provided in the Analyses to suggest this would be the case; and/or
- 48.2. They wish to access newer housing on potentially larger plot-sizes, trading semi-rural lifestyle with greater travel times/costs (to work/shops/schools) against urban living (higher housing costs, possibly lower travel times/costs, but smaller homes with urban rather than semi-rural amenity); and
- 48.3. It is easier for homeowners with high equity (e.g. in urban areas larger than Ōhoka) to relocate to an area requiring less equity than vice versa, and/or to find takers of the Project's proposed capacity by relocating a small share of fewer larger population bases than to relocate potentially larger shares from multiple smaller

¹⁸ <https://www.opespartners.co.nz/property-markets/canterbury/waimakariri>.

population bases (especially if residents of those smaller bases have lower equity, and already enjoy larger sections or rural/village amenity).

49. Under either of these two “displacement” rather than “incremental” counterfactuals, certain significant Project costs – notably incremental infrastructure costs – are likely to arise with the Project, as discussed further in Section 6.4 below.

5. Assessment of the M.E Analysis

5.1 Overview

50. In this section I explain how the analysis in the M.E Report:
 - 50.1. Neglects to mention the Project’s obvious violation of an important referral criterion;
 - 50.2. Asserts, but neither substantiates nor quantifies, multiple qualitative Project benefits;
 - 50.3. Asserts such qualitative benefits despite them failing to withstand even minimal scrutiny;
 - 50.4. Applies a methodology, EIA using input-output (I-O) multipliers for assessing indirect and induced project impacts, that measures Project impacts (not benefits), and which is known to overstate those impacts;
 - 50.5. Fails to account for the Project’s displacement effects and opportunity costs, further over-stating claimed impacts;
 - 50.6. Fails to follow standard/good economic modelling practice by not converting multi-year impacts into present value terms;
 - 50.7. Further fails to follow standard/good economic modelling practice by not providing sensitivity analyses or scenario modelling to assess how sensitive claimed impacts are to changes in key input assumptions or other modelling uncertainties;
 - 50.8. Ignores even market costs, let alone Project non-market costs; and

50.9. Asserts, but does not demonstrate the regional or national significance of claimed Project impacts, and incorrectly assesses significance at a district level.

5.2 Project's Obvious Violation of Important Referral Criterion

51. As discussed below, the M.E Report asserts the significance of the Project's impacts (if not benefits) by reference to various of the referral criteria set out in s. 22 of the FTAA.

52. However, setting aside the fact that panels are required under s. 81(4) of the FTAA to substantively assess the extent of project benefits whether or not any or all of the s. 22 referral criteria are satisfied, the M.E Report omits to mention that the Project clearly violates one of those referral criteria:

52.1. Specifically, in assessing whether a "project is an infrastructure or development project that would have significant regional or national benefits" under s. 22(1)(a), the Minister may consider whether the project "is consistent with local or regional planning documents, including spatial strategies" under s. 22(2)(a)(x).

53. Since the Project is an out-of-sequence housing development requiring a zoning change, it is clearly not "consistent with local or regional planning documents, including spatial strategies":

53.1. As such, it is also questionable whether the Project contributes to a "well-functioning urban environment" under s. 22(2)(a)(iii) of the FTAA, as is discussed further below.

5.3 Multiple Qualitative Project Benefits Asserted, But Neither Substantiated Nor Quantified

54. As noted above, the M.E Analysis asserts the significance of Project impacts (if not benefits) by reference to the FTAA's s. 22 referral criteria. Other qualitative benefits are also asserted in the M.E Report.¹⁹

55. However, these benefits and their significance are neither substantiated nor quantified. As such, they are merely claimed, which in my opinion carries negligible evidentiary value:

¹⁹ M.E Report, at Sections 4.1.6, 4.2, and 5.

55.1. Indeed, as discussed next, many of these claimed benefits fail to withstand even minimal scrutiny.

5.4 Many Claimed Qualitative Benefits Fail to Withstand Even Minimal Scrutiny

56. Many of the qualitative benefits claimed in the M.E Report are superficial and easily contradicted.

57. For example, one of the M.E Report's claimed qualitative benefits is reduced pressure on house prices, despite no evidence being provided as to what the Project's housing pricing points will be, let alone how they will compare with pricing points for comparable housing:

57.1. However, while first home buyers (or renters) might prefer reduced pressure on house prices, most New Zealanders save for their retirement by accumulating equity in their homes, which equity benefits from increased pressure on house prices;

57.2. Ironically, accumulating home equity is a critical means of enabling older New Zealanders to afford the cost of purchasing a right to occupy (and pay deferred management fees) in the sort of retirement village the Project is most likely proposing:

57.2.1. Hence, if the Project reduces house price growth of existing homeowners, it will also reduce the ability of older such homeowners to afford retirement care (i.e. reducing – not improving – housing affordability for that market segment).

58. Relatedly, the M.E Report claims that a reason for such reduced pressure on housing prices is that the Project will increase land market competition:²⁰

58.1. However, as discussed in Section 4, the Project most likely displaces housing development elsewhere in the district, in which case it relocates housing development from other developers to the Applicant.

²⁰ M.E Report, at Section 4.1.2.

59. To the extent those other housing developers are competing with each other – as is likely the case for planned urban development in the district – displacing that development activity to the Applicant in fact results in a reduction in land market competition:
- 59.1. This is because the Applicant, as a master plan developer, is a local monopolist – it controls the typology, quality, timing and offer prices of the housing capacity it develops;
- 59.2. As such, the Project could result in reduced land market competition and higher housing prices – an outcome that will be favourable to the Applicant (and detrimental to competing developers who suffer reduced demand due to it being displaced to the Project’s out-of-sequence development) as well as to existing homeowners saving for their retirement, if not to first home buyers or renters.
60. A comprehensive CBA of the Project would consider the change in consumer welfare (“consumer surplus”) due to the Project, as well as the change in firm profits (“producer surplus”) arising due to the Project, and any other welfare impacts of the Project:
- 60.1. This means it is pertinent to consider not just any benefits (or losses) to new and existing homeowners and renters arising due to the Project, but also benefits (or losses) to the Applicant or other property developers;
- 60.2. As such, the true net benefits of the Project are far more nuanced than those superficially asserted in the M.E Report.
61. Furthermore, the M.E Report claims that the Project would address possible housing supply shortages:²¹
- 61.1. Yet no data re provided showing that the district or region are suffering from homelessness, overcrowding, or distressed household budgets (e.g. sacrificing expenditures on essentials like food or electricity) due to high housing costs;
- 61.2. As such, the most that can be said about the Project based on the evidence provided is that it is likely to displace housing growth elsewhere in the district (either in nearby rural and small urban areas as per the Savvy Report preferred counterfactual, or possibly from larger nearby urban areas under my suggested counterfactual) which of itself – absent further details regarding affordability, etc –

²¹ M.E Report, at p. 12.

does nothing to establish that there are local housing shortages, or that the Project will address them if they exist.

62. Relatedly, the M.E Report claims that the Project will improve housing market responsiveness:²²

62.1. While this term is inherently vague, it might be interpreted as meaning that housing suppliers will better provide the types of housing demanded by home-buyers and renters as their housing preferences change.

63. Yet, as discussed in Section 3, the M.E Report provides no details as to the typology, quality or pricing points of the Project's housing, and in reality the Applicant will determine these (as a master-planned housing developer) to maximise its own profits in response to changing market preferences:

63.1. This says nothing about ensuring the housing market responds to the changing preferences of market segments that would not maximise the Applicant's profits – e.g. low-income, high-needs homebuyers or renters, for whom affordability issues will be most pronounced.

64. Finally, the M.E Report asserts that the Project will result in more coordinated infrastructure delivery:²³

64.1. While this may be true at the level of the Project itself, it is not the case that an out-of-sequence housing development as proposed will ensure more coordinated infrastructure delivery across existing or planned growth areas, and could rather disrupt such delivery (as Section 4.1 of the Savvy Report acknowledges);

64.2. This is potentially an important area where the Project will give rise to significant adverse impacts, as discussed further in Section 6.4 below.

65. If the M.E Analysis (and Savvy Analysis) had provided a comprehensive CBA of the Project's net benefits and adverse impacts, a full accounting of all the relevant Project benefits and costs would make it much clearer if the impacts asserted in the M.E Report would arise at all, and how they might need to be weighed against other such Project costs and benefits.

²² M.E Report, at p. 18.

²³ M.E Report, at p. 18.

5.5 Methodology Applied Measures Impacts, Not Benefits, and is Known to Overstate Impacts

66. The M.E Report analyses the Project's impacts using I-O multiplier-based EIA:²⁴

66.1. As explained in Section 2.3, EIA assesses project impacts, not project benefits, and Treasury advises against its use for assessing the social welfare impacts – i.e. “benefits” – of projects.

67. As acknowledged in the Savvy Report, I-O multiplier analysis has limitations which mean that indirect and induced economic impacts are maximum possible such impacts – i.e. they are not an unbiased indicator of the Project's true impacts:²⁵

67.1. As such, the impacts presented in the M.E Report will overstate the Project's true impacts – setting aside the issue discussed earlier that project impacts are not the same as benefits.

68. Indeed, even if an EIA were deemed appropriate for establishing significant regional or national benefits, this requires use of an approach that more properly assesses the flow-on economic impacts of the Project than the I-O multiplier method used in the M.E Report. That method has widely-acknowledged limitations due to the restrictive and unrealistic assumptions it is based upon, and systematically overstates economic benefits due to those limitations.²⁶

69. For example, the Australian Bureau of Statistics (**ABS**) ceased publishing I-O multipliers almost 25 years ago due to the method's unrealistic assumptions and inherent bias, stating:²⁷

²⁴ The source notes to Tables 3 and 4 of the M.E Report state that the Project's economic “effects” were assessed using M.E's I-O model. The surrounding discussion makes it clear that EIA is being applied, given references to induced and indirect effects.

²⁵ Savvy Report, at footnote 4.

²⁶ For example, see Counsell, K., 2024, “Improving economic analysis in environmental decision-making: a tale of two coal mines”, *Resource Management Journal*, August. A more comprehensive discussion of I-O multipliers and their alternatives for economic impact analysis is given in Dwyer, L., Forsyth, P. and W. Dwyer, 2020, chapter 9, “The Economic Impacts of Tourism”, *Tourism Economics and Policy*, Channel View Publications.

²⁷ <https://www.abs.gov.au/ausstats/abs@.nsf/Previousproducts/5209.0.55.001Main%20Features42009-10>.

“Production of multipliers was discontinued with the 2001–02 issue for several reasons. There was considerable debate in the user community as to their suitability for the purposes to which they were most commonly applied, that is, to produce measures of the size and impact of a particular project to support bids for industry assistance of various forms. ...

“I–O multipliers are most commonly used to quantify the economic impacts (both direct and indirect) relating to policies and projects. While their ease of use makes I–O multipliers a popular tool for economic impact analysis, they are based on limiting assumptions that results in multipliers being a biased estimator of the benefits or costs of a project.” [emphasis added]

70. The ABS summarises the “inherent shortcomings and limitations of multipliers for economic impact analysis” as follows:²⁸

70.1. Lack of supply-side constraints: The most significant limitation of economic impact analysis using multipliers is the implicit assumption that the economy has no supply-side constraints. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or near capacity.

70.2. Fixed prices: Constraints on the availability of inputs, such as skilled labour [or housing], require prices to act as a rationing device. In assessments using multipliers, where factors of production are assumed to be limitless, this rationing response is assumed not to occur. Prices are assumed to be unaffected by policy and any crowding out effects are not captured.

70.3. Fixed ratios for intermediate inputs and production: Economic impact analysis using multipliers implicitly assumes that there is a fixed input structure in each industry and fixed ratios for production. As such, impact analysis using multipliers can be seen to describe average effects, not marginal effects. For example, increased demand for a product is assumed to imply an equal increase in production for that product. In reality, however, it may be more efficient to increase imports or divert some exports to local consumption rather than increasing local production by the full amount;

70.4. No allowance for purchasers’ marginal responses to change: Economic impact analysis using multipliers assumes that households consume goods and services in

²⁸ <https://www.abs.gov.au/ausstats/abs@.nsf/Previousproducts/5209.0.55.001Main%20Features42009-10>.

exact proportions to their initial budget shares. For example, the household budget share of some goods might increase as household income increases. This equally applies to industrial consumption of intermediate inputs and factors of production.

70.5. **Absence of budget constraints:** Assessments of economic impacts using multipliers that consider consumption induced effects (type two multipliers) implicitly assume that household and government [e.g. local government] consumption is not subject to budget constraints.

70.6. **Not applicable for small regions:** Multipliers that have been calculated from the national I-O table are not appropriate for use in economic impact analysis of projects in small regions. For small regions multipliers tend to be smaller than national multipliers since their inter-industry linkages are normally relatively shallow. Inter-industry linkages tend to be shallow in small regions since they usually don't have the capacity to produce the wide range of goods used for inputs and consumption, instead importing a large proportion of these goods from other regions.

71. Notably, for the Project, the Analysis' methodology not allowing for supply-side constraints means that competition for things like (skilled) labour, materials, or accommodation for construction and other workers – if there is not significant excess capacity for those things – might simply displace economic activity elsewhere.

72. Likewise, due to implicitly assuming fixed input prices, the Project's purported impact may turn out to be much less beneficial than as assessed if competition for things like (skilled) labour or temporary accommodation for development and other workers bids up prices such as wages and rents.

73. Given these limitations, Treasury guidance when assessing project proposals is that I-O multipliers of the sort used in the Analysis of the Project should be ignored unless there is significant unemployment (I would add, or other significant spare capacity – e.g. in accommodation for construction workers, etc) in the economy:²⁹

73.1. This means, at best, the Project's assessed impact (let alone benefit) is at most that assessed in the M.E Analysis;

²⁹ Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 16.

- 73.2. In reality, since the M.E Analysis ultimately measures gross economic impact, and does so using I-O multipliers, its assessment of the Project's economic impact will *overstate* the Project's actual benefits.
74. A technique better suited to assessing the economic impact of the Project is computable general equilibrium (**CGE**) analysis. Unlike I-O multipliers-based EIA, CGE more comprehensively and realistically accounts for how an economic stimulus ripples through other parts of the economy (either by sector or region), including by allowing for constraints in the supply of labour, housing (etc), and also allowing for prices to adjust in response to the proposed stimulus:
- 74.1. In my opinion, where an EIA is used, it is preferable to undertake a full CGE analysis of the Project's regional and national impacts – though, as above, only if and to the extent that such impacts constitute regional or national benefits;
- 74.2. By better accounting for regional and economy-wide feedback loops than I-O multipliers-based EIA, CGE analysis would better identify whether the Project gives rise to net regional benefits, and also net national benefits.

5.6 Project's Displacement Effects and Opportunity Costs Not Accounted For, Further Over-Stating Impacts

75. As discussed above, the M.E Analysis' use of I-O multiplier-based EIA inherently overstates the Project's true impacts, partly because that methodology ignores supply-side constraints and (input) price responses:
- 75.1. More fundamentally, the M.E Analysis grossly overstates the Project's impacts due to assuming a counterfactual in which all of the Project's new capacity is entirely incremental, when in reality, I and Savvy agree that demand for the Project's capacity will displace demand from elsewhere in the district (or region or country).
76. Likewise, the M.E Analysis claims large employment benefits from the project – in terms of additional FTEs, especially during the Project's 10 year construction phase:³⁰

³⁰ M.E Report, at Sections 4.1.3-4.1.5.

- 76.1. However, since a more plausible counterfactual assumption would mean these jobs are simply being displaced from other developments, this means there are no material incremental employment benefits being offered by the Project.
77. Indeed, for the M.E Analysis' claimed employment benefits to arise, it would need to be assumed that all the relevant workers are completely idle for the 10 year duration of the Project, which is simply untenable:
- 77.1. However, even if those workers were (implausibly) completely unemployed for the Project's duration, absent the Project, it would be necessary to account for those workers' opportunity cost when assessing the Project's employment benefits, which Treasury guidelines indicate should be measured as 50% of their market wage, to recognise that even unemployed people are able to enjoy leisure time;³¹
- 77.2. If the workers were not unemployed absent the Project, but simply working elsewhere, their opportunity cost would be the income they expect to earn from their alternative employment;
- 77.3. Either way, the Project's employment benefits – if any (given the Project's displacement of housing and construction activity elsewhere) – would only be a fraction of the impacts claimed in the M.E Report, after allowing for relevant opportunity costs.
78. The Savvy Report alludes to similar issues, before discussing the Project's likely displacement effects, acknowledging that "employment impacts may represent a combination of new [i.e. incremental] jobs and sustained existing [i.e. displaced] jobs."³²

5.7 Claimed Impacts Not Expressed in Present Value Terms

79. The M.E Report presents claimed Project impacts over its assumed 10 year construction period as the sum of those impacts over those 10 years.
80. However, due to the time value of money, it is standard practice in multi-year economic analyses to convert monetary amounts that arise in the future to their present value equivalent, by "discounting" those future amounts at a suitable "discount rate":

³¹ Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 18.

³² Savvy Report, at footnote 4.

- 80.1. Failing to do so provides a misleading impression of project impacts, since monetary amounts received in the future are worth less now than the same monetary amounts received earlier.
81. A broadly applicable discount rate to be applied to Project impacts over time would be Treasury's 8% real pre-tax discount rate for mainly commercial projects:³³
- 81.1. Applying that discount rate to the Project's claimed \$20 million per annum direct construction effects³⁴ converts the \$200 million total to just \$134 million over 10 years;
- 81.2. Applying it to the Project's claimed direct, indirect and induced construction effects totalling \$400 million³⁵ results in a present value of just \$268 million over 10 years.
82. Such an adjustment is essential for more properly gauging the Project's overall impacts, since they are projected to arise over time:
- 82.1. However, these adjusted amounts assume an implausible counterfactual in which the Project's impacts are entirely incremental – as noted in Section 4, Savvy and I agree that the Project is likely to displace housing development elsewhere, in which case even these present value figures vastly overstate the true present value of the Project's impacts.

5.8 Sensitivity Analysis and Scenario Modelling Not Provided to Assess Sensitivity of Claimed Impacts to Changes in Key Assumptions or Key Modelling Uncertainties

83. Also at odds with good modelling practice (e.g. Treasury's guidance on CBA),³⁶ and Savvy's approach,³⁷ the M.E Report fails to test key assumptions, or provide sensitivity analyses or scenarios/ranges to assess the sensitivity of modelled results to changes in key (and likely uncertain) input assumptions.

³³ <https://www.treasury.govt.nz/sites/default/files/2024-10/treasury-circular-2024-15.pdf>, at paras 13-16.

³⁴ M.E Report, at p. 16.

³⁵ M.E Report, at p. 16.

³⁶ Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at pp 31, 64, 72.

³⁷ Savvy Report, at Appendix 6.

84. Just as it is essential to convert future impacts into their present value, it is also essential to properly assess how uncertainties affect modelling results – the M.E Analysis has not done so.

5.9 Project's Market Costs and Non-Market Costs Ignored

85. I acknowledge that the M.E Report does not set out to provide a comprehensive CBA of the Project's net benefits and adverse impacts, instead focusing on Project impacts, leaving the Savvy Report to address Project costs:

85.1. As such, it goes without saying that the M.E Analysis ignores even “market” costs, let alone Project “non-market” costs;

85.2. I defer my assessment of whether all relevant market or non-market costs have been accounted for to my discussion of the Savvy Report in Section 6.

86. However, to better understand the distinction between “market” and “non-market” benefits and costs, market-based values relate to things (like commodities, or labour) that are traded in markets and which can be valued by reference to market prices. Conversely, non-market goods or services are not traded in markets:

86.1. This does not mean non-market goods or services are unimportant (publicly-provided health or education services are a prominent example), but rather that their value is often overlooked or incompletely assessed because it is not possible to use market prices to estimate their value – when they are not treated commensurately with market goods or services, their values tend to be under-acknowledged;³⁸

86.2. Such non-market costs/benefits are typically not immaterial just because they lack market prices – according to a prominent study assessing non-market values of New Zealand's land-based ecosystems, those non-market values can be at least as great as their market values.³⁹

³⁸ Eppink et al., 2016, *Non-Market Values in a Cost-Benefit World: Evidence from a Choice Experiment*, <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0165365>.

³⁹ Patterson and Cole, 2013, *'Total Economic Value' of New Zealand's Land-Based Ecosystems and their Services*.

87. A framework commonly used by economists to characterise the full range of both market and non-market values is the so-called Total Economic Value (TEV) framework:⁴⁰
- 87.1. For example, the TEV framework can be used to characterise the full range of values that can be attached to things like natural resources;⁴¹
- 87.2. Relatedly, over many decades economists from multiple specialisations (e.g. environmental, transport, competition, labour, health, education and cultural economics) have developed an extensive and well-established range of sophisticated non-market valuation (NMV) techniques to objectively estimate people's subjective non-market values.
88. A 2018 Treasury discussion paper applies the TEV framework to the valuation of natural capital (i.e. minerals, energy resources, land, soil, water, trees, plants and wildlife),⁴² stating that the "general framework has been recognised for the past 30 years".⁴³
89. In short, the TEV framework recognises that the value attaching to any given resource (e.g. minerals) is not confined to the value that can be realised in a market exchange of that resource or the commercial produce it can sustain, but can either:
- 89.1. Sustain a range of co-existing and additive other values (e.g. social, environmental or cultural values), even if market prices do not exist to directly quantify those other values; or
- 89.2. Conflict with those other values – e.g. creating non-market opportunity costs.
90. While there are numerous variants of the TEV framework applied in practice,⁴⁴ Figure 1 illustrates one such variant, based on a prominent study assessing TEV for New Zealand's

⁴⁰ A survey of the TEV literature is provided in NZIER, 2018, *What's the Use of Non-Use Values?*

⁴¹ It is also increasingly being used to assess cultural value. For a survey, see Allan et al., 2013, *Value and Culture*, Motu Working Paper 13-09.

⁴² van Zyl and Au, 2018, *The Start of a Conversation on the Value of New Zealand's Natural Capital*, Treasury Discussion Paper 18/03.

⁴³ van Zyl and Au, 2018, *The Start of a Conversation on the Value of New Zealand's Natural Capital*, Treasury Discussion Paper 18/03, at p. 7.

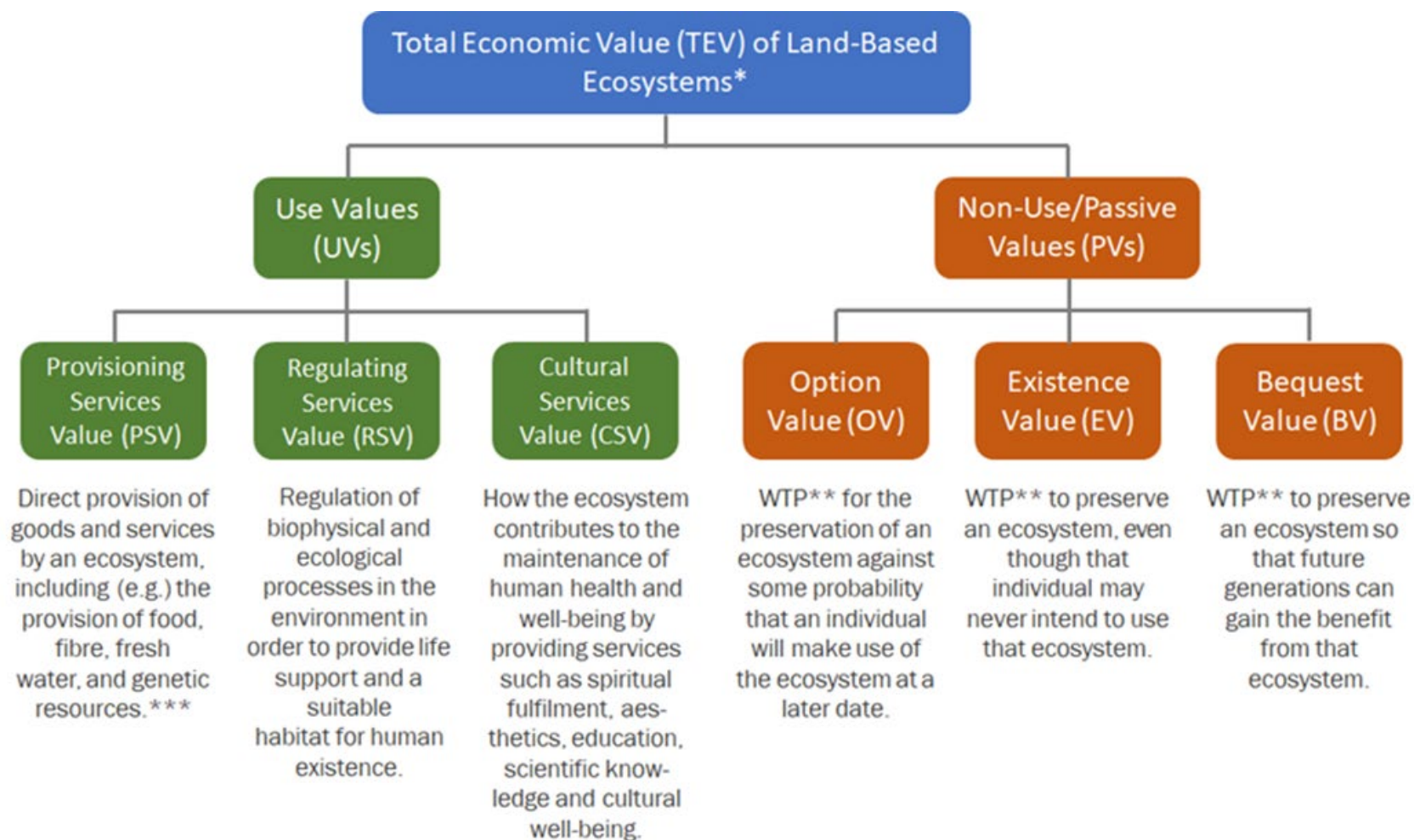
⁴⁴ For multiple examples, see van Zyl and Au, 2018, *The Start of a Conversation on the Value of New Zealand's Natural Capital*, Treasury Discussion Paper 18/03, Appendix 1, at pp 36-39.

land-based ecosystems.⁴⁵

91. Clearly it is open to the Panel to weigh any adverse impacts of the Project against claimed Project benefits (whether measured as impacts or benefits) with or without any or all of those adverse impacts being monetised. However:
 - 91.1. This would seem incongruous if any adverse effects are inherently monetisable and benefits/impacts have been presented in monetary terms;
 - 91.2. Good modelling practice would be to systematically and transparently include all credibly monetisable costs and benefits in the model itself, since omitting relevant and material costs or benefits clearly risks misleading modelling conclusions being reached;
 - 91.3. If relevant and material adverse effects are not monetised in some objective way, they can only be weighed in purely subjective terms against monetised (net) project benefits, which calls the very purpose of economic modelling into question (if it is not necessary for adverse effects, then is it necessary for benefits/impacts, and if not, then what would be the basis for assessing regional or national benefits?);
92. Hence, monetising impacts – where this can be done credibly – should assist Panels in their assessment of how project benefits compare with project adverse impacts:
 - 92.1. In practice, many non-market benefits can only be monetised approximately. However, it is a false dichotomy to suggest that any or all market impacts/benefits can be monetised more accurately – the Project's market impacts/benefits arise over a future 10 year period, and it is impossible to accurately assess Project impacts/benefits arising in even one let alone 10 years' time, given the relevant market prices and production technologies are inherently uncertain and impossible to predict with accuracy;
 - 92.2. None of this is to suggest that modelling should be abandoned – rather that it be applied as systematically, transparently and robustly as it can be, highlighting the implications of key areas of uncertainty for modelled results – e.g. performing sensitivity analyses on key input assumptions, as discussed above;

⁴⁵ Patterson and Cole, 2013, *'Total Economic Value' of New Zealand's Land-Based Ecosystems and their Services*.

Figure 1 – Total Economic Value (TEV) Framework as Applied to New Zealand’s Land-Based Ecosystems by Patterson and Cole 2013



Notes: * based on Patterson and Cole 2013, at pp 499-500. ** WTP = willingness to pay. *** Usually measured in gross domestic product (GDP), but some PSVs are not because they involve no market exchange (e.g. collecting firewood for one’s own use).

Source: Author’s adaptation of Patterson and Cole 2013.

- 92.3. That would then better support any remaining subjective trade-offs that need to be made, while avoiding the need for subjective trade-offs wherever possible.

5.10 Significance of Project Impacts Asserted but not Demonstrated, and Wrongly Assessed at District Level

93. Despite using I-O multiplier-based EIA to assess the Project's impacts, Section 4 of the M.E Report claims that it "quantifies and summarises the economic benefits of developing the subject land at Ōhoka" [emphasis added]:⁴⁶
- 93.1. For the reasons set out earlier, cost-based impacts that are then over-inflated by I-O based multipliers do not measure benefits as are the focus of s. 3 of the FTAA, and over-state even those impacts.
94. Moreover, the M.E Analysis assesses the Project's gross impacts before deduction of any Project costs/adverse impacts (and also does not deduct displacement effects or opportunity costs as discussed in Sections 4 and 5.9) – with the Savvy Report separately addressing (certain) Project costs/adverse impacts:
- 94.1. This means any assessment made by M.E of the significance of the Project's gross impacts is inherently overstated.
95. The M.E Report further explains that its assessed Project benefits (actually, gross impacts) "are then evaluated against the district and regional economies to assess their overall significance":⁴⁷
- 95.1. Clearly any evaluation of the Project against district economies is inconsistent with the requirements of s. 3 of the FTAA, which focuses on the significance of regional or national benefits;
- 95.2. If Parliament had intended the significance of Project benefits (let alone impacts) to be assessed at the district level, I would have expected it – and the FTAA – to have said so.
96. For completeness, however, since "regional" is not defined in the FTAA itself, but s. 4(2) of the FTAA provides that terms not defined in the FTAA are as defined in the RMA, I

⁴⁶ M.E Report, at p. 12.

⁴⁷ M.E Report, at p. 12, and see also p. 20.

understand “region” in the context of s. 3 of the FTAA to mean a region of a relevant regional council as that region is determined in the Local Government Act 2002 (per the definition of region in s. 2 of the RMA):

- 96.1. In turn, s. 5 of the Local Government Act 2002 defines a “region” to be the region of a regional council, but includes the district of a territorial authority if the territorial authority is a unitary authority;
 - 96.2. Since I understand that Waimakariri (the relevant district) is not a unitary authority, but instead a district falling under the auspices of Canterbury Regional Council, it appears that the Canterbury region is the relevant region for the purposes of assessing significance under s. 3 of the FTAA (and not Waimakariri or any other district within that region).
97. Setting aside that the M.E Report considers the Project’s gross impacts (not benefits) and does so under an untenable counterfactual in which all Project impacts are incremental, and purports to assess the significance of those impacts at a district (as well as regional) level despite district comparisons not according with the clear requirements of s. 3 of the FTAA, there are three other clearly problematic aspects to how the M.E Report purports to assess significance:
- 97.1. First, it addresses significance by comparing outcomes with the Project against outcomes in which none of the Project’s outcomes otherwise arise – as explained in Section 4, this assumes an untenable counterfactual in which the Project does not displace activity from elsewhere, and all Project impacts are wholly incremental;
 - 97.2. Second, Project impacts are not compared with obvious benchmarks – e.g. what percentage of Canterbury’s annual GDP are the annual (not total, or present value, over 10 years) Project impacts, since those impacts have been measured in GDP terms, and likewise, what proportion of Canterbury employment do the assessed employment FTEs represent?⁴⁸

⁴⁸ While practice in this regard differs across FTAA applications, I note that the economist for the applicant in the Bendigo-Ophir gold-mining FTAA application also chose to assess the significance of claimed Project FTE and GDP impacts by reference to regional FTE and GDP levels.

- 97.3. Thirdly, given these flaws, a reader is simply being asked to accept that the Project's impacts are significant because the M.E Report claims they are so – significance is in no way demonstrated or substantiated.
98. For reference purposes, Canterbury employment and GDP in 2025 were 365,376 filled jobs (not FTEs per se) and \$53,919m respectively:⁴⁹
- 98.1. Since the Project's construction impacts in GDP terms – including direct, indirect and induced impacts – is assessed to be \$400 million in total over 10 years,⁵⁰ this implies GDP impacts of \$40 million per annum, which amounts to just 0.07% of Canterbury's current GDP (i.e. that current GDP is almost 1,350 times greater than the Project's maximum/overstated/inflated gross GDP impacts);
- 98.2. Since the Project's construction impacts in FTE terms is 3,700 job years, or an average of 370 FTEs per annum, this amounts to just 0.1% of current Canterbury employment (i.e. that current employment is 1,000 times the Project's maximum/overstated/inflated gross FTE impacts).
99. These impacts are essentially immaterial even when based on the Project's maximum/overstated/inflated gross impacts:
- 99.1. They are even more immaterial – likely orders of magnitude smaller – once Project costs (including opportunity costs) have been accounted for, and after allowing for the Project to simply displace activity from elsewhere in the region rather than representing net incremental activity.
100. As such, it is my opinion that even the claimed maximum/overstated/inflated gross Project impacts – even if they were supposed to constitute benefits as required under s. 3 of the FTAA – are not significant at the regional level:
- 100.1. As such, they will be even less significant at the national level.

⁴⁹ Using regional economic data published by Infometrics: <https://regions.infometrics.co.nz/canterbury-region/>.

⁵⁰ M.E Report, at p. 16.

6. Assessment of the Savvy Analysis

6.1 Overview

101. As explained in Section 5.9, the M.E Report does not assess even market costs of the Project, let alone its non-market costs.
102. The analysis in the Savvy Report partially remedies this omission, in that it:
- 102.1. Quantifies the market economic costs of both commercial centre displacement effects,⁵¹ and a loss of land-based primary production,⁵² due to the Project;
 - 102.2. Acknowledges but does not quantify likely significant adverse impacts in terms of the Project leading to:⁵³
 - 102.2.1. Slower cost-recovery on existing or planned council infrastructure in locations from where demand is expected to be redirected;
 - 102.2.2. Life-cycle infrastructure costs not fully recovered from development contributions;
 - 102.2.3. Increased school funding costs due to concentrating growth at Ōhoka; and
 - 102.3. Discusses and partially quantifies archaeological and ecological (wetland) adverse impacts.⁵⁴
103. However, in this section I explain how the Savvy Analysis:
- 103.1. Misapplies RMA framing to unduly limit relevant commercial centre displacement costs;
 - 103.2. Uses a restrictive methodology to assess the Project's adverse impacts/costs, meaning relevant costs are restricted to only a subset of even "economic" costs;

⁵¹ Savvy Report, at Section 2.

⁵² Savvy Report, at Section 3.

⁵³ Savvy Report, at Section 4.1.

⁵⁴ Savvy Report, at Section 4.2.

103.3. Ignores other major Project adverse impacts/costs;

103.4. Ignores likely adverse social impacts during the Project's construction phase; and

103.5. Only partially acknowledges, and does not quantify, other Project adverse impacts.

6.2 RMA Framing Misapplied to Unduly Limit Relevant Commercial Centre Displacement Costs

104. The Savvy Report assesses commercial centre displacement effects due to the Project in terms of the Project's impacts on the vibrancy, viability and amenity of affected commercial centres:⁵⁵

104.1. While trade competition effects – i.e. loss of profits (for Mandeville retailers in particular) – are considered in the Savvy Analysis as a means of assessing how the Project affects the vibrancy, viability and amenity of affected commercial centres, those trade competition effects are not themselves counted as relevant economic costs;

104.2. The latter are likely to be material, in the short-term for Mandeville retailers at least, who the Savvy Analysis suggests will suffer a sales decline in 2028 of 21-29% relative to 2026 levels⁵⁶ – enough to turn profitable operations operating on narrow margins and with significant fixed costs (e.g. supermarkets) to go from being profitable to being unprofitable.

105. This assessment of vibrancy, viability and amenity impacts, but exclusion of trade competition and loss of profit impacts, may be consistent with how such matters are treated under the RMA:

105.1. However, as emphasised in the Novo Application Report, the Application is not being assessed under the conventional framework of the RMA,⁵⁷ but instead under the FTAA (which is bespoke legislation, with its own s. 3 being paramount);

105.2. Moreover, under a full CBA of the Project's net benefits (and adverse impacts), any change in producer surplus due to the Project (i.e. change in firm profits) would be

⁵⁵ Savvy Report, at Section 2.

⁵⁶ Savvy Report, at p. 34.

⁵⁷ Novo Application Report, at paras 5-9.

included in the Project's evaluation – not just for the Applicant, but also for all other affected firms (as discussed in Section 5.4).

106. This means the Savvy Report's analysis of commercial centre displacement impacts due to the Project is unduly narrow in focus, not even counting all relevant "market" costs of the Project, and therefore understates those impacts.

6.3 Restrictive Methodology Used to Assess Project Costs

107. The Savvy Report relies primarily on EIA when assessing adverse impacts/costs due to the Project:

107.1. Since s. 85(3) of the FTAA speaks directly of "adverse impacts", it is superficially appropriate to use EIA to assess adverse Project impacts;

107.2. However, as explained in Section 5.9, there are multiple types of impact that fall outside of impacts assessed in GDP terms, including non-market impacts which can be at least as material as market impacts, and which are not inherently less able to be accurately measured than all relevant market impacts.

108. The Savvy Report defers to other, non-economic experts, to provide non-monetised assessments of other Project adverse impacts:

108.1. While it is clear that EIA, as a methodology focused only on selected market impacts, is incapable of assessing even the full range of market impacts, let alone non-market impacts (about which it can say nothing), this is not a reason for economists to abandon one of their primary endeavours – namely evaluating non-market matters for which market prices are not available but which are economically important nonetheless;

108.2. Indeed, as discussed in Section 5.9, over many decades economists from multiple specialisations (e.g. environmental, transport, competition, labour, health, education and cultural economics) have developed an extensive and well-established range of sophisticated NMV techniques to objectively estimate people's subjective non-market values.⁵⁸

⁵⁸ The author invested greatly in becoming conversant in NMV techniques as part of his graduate studies in competition and regulatory economics, and since completing his PhD has undertaken a range of NMV

109. As such, I cannot agree with the Savvy Report's marginalisation of entire branches of economics to leave it to non-economic experts to have sole input over the Project's adverse impacts – doing so ignores the fact that non-market valuation:
- 109.1. Is squarely an established area across multiple branches of economics;
 - 109.2. Can offer insights to decision-makers (like FTAA panels) that other disciplines cannot; and
 - 109.3. Most fundamentally, can assist decision-makers in overcoming the incommensurability (and subjective trade-offs) problem that arises when non-monetary matters are weighed against monetary ones – in practice with non-monetary matters being unduly marginalised as a consequence.⁵⁹
110. Importantly, this is not a hypothetical matter – non-market costs are routinely monetised by government agencies when assessing major public projects, investments or regulatory interventions, e.g.:
- 110.1. When Waka Kotahi/NZTA and the Ministry of Transport (since 1 July 2026, MCERT) use CBA to assess roading projects or transport safety measures – the core metrics used in such CBAs include non-market values such as the value of statistical life and value of travel time savings, among many others; or
 - 110.2. When Pharmac assesses the cost-effectiveness of new medications – a core metric in this case includes quality-adjusted life years, a value of health outcomes and prolonged life that is not based on market prices; and
 - 110.3. Treasury publishes a database (with guidelines and tools) for other government agencies to use when undertaking CBAs, which database includes numerous non-market values.⁶⁰

studies across diverse domains, such as valuing culture, assessing the welfare impacts of inequitable access to schooling, assessing fair and reasonable pay for health professionals, valuing transport metrics, measuring the welfare impacts of distributed energy resources such as rooftop solar panels, and assessing the welfare impacts of structural change in the U.S. banking sector.

⁵⁹ Eppink et al., 2016, *Non-Market Values in a Cost-Benefit World: Evidence from a Choice Experiment*, <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0165365>.

⁶⁰ <https://www.treasury.govt.nz/information-and-services/public-sector-leadership/investment-management/investment-planning/treasurys-cbax-tool>.

111. Moreover, in the FTAA context, economists for applicants have relied on non-market benefits to demonstrate how the relevant projects give rise to significant regional or national benefits, e.g.:

111.1. The applicant's economists in the Te Ākau Bream Bay sandmining application count the social value of reduced travel time and reduced social costs of road accidents as project benefits;

111.2. The applicant's economists in the Whiterock Class 3 managed fill application likewise appeal to such non-market benefits, as well as avoided emissions costs (based on the social cost of carbon, which – unlike a NZU price in New Zealand's emissions trading scheme – is not an observable market value).

112. In conclusion, by focusing just on selected market impacts and not other market impacts (as in Section 6.2) or non-market impacts, the Savvy Analysis is once again unduly limited in the range of adverse impacts it considers, and as a consequence understates those adverse impacts.

6.4 Other Major Project Adverse Impacts/Costs Ignored

113. The Savvy Analysis either omits or mis-states the following key Project adverse impacts/costs:

113.1. The net benefits of housing and retirement village capacity displaced by the Project;

113.2. Infrastructure diseconomies arising as a consequence of the Project requiring out-of-sequence greenfield infrastructure investment in a location with currently limited infrastructure, likely at the expense of less costly brownfield infrastructure expansion to meet in-sequence housing growth that is displaced elsewhere; and

113.3. The potentially significant costs of relocating and safeguarding at-risk and protected skinks (or of failing to do so).

114. As to the former, I noted in Section 4 that Savvy considers the most realistic Project counterfactual to be one in which the Project displaces housing growth from neighbouring rural and small urban areas:

- 114.1. This is in stark contrast to the M.E Analysis, which implicitly assumes that all of the housing and other capacity due to the Project is strictly incremental, and as a consequence vastly overstates the Project's true impacts (let alone benefits).
115. While the Savvy Analysis partially addresses commercial centre displacement impacts due to the Project, for the reasons discussed in Section 6.2 those impacts have been understated:
- 115.1. More significantly, however, the Savvy Analysis makes no attempt to assess the Project's adverse impacts arising from it displacing housing and retirement village capacity from other parts of the country;
- 115.2. The Savvy Analysis clearly assumes that such displacement occurs, and the M.E Analysis itself makes no deduction for the costs of this displacement (instead valuing the Project's impacts gross of such displacement).
116. This means that neither of the Analyses makes any deduction for these clearly material adverse impacts, meaning that the Project's net assessed impacts (i.e. gross impacts as assessed in the M.E analysis, less costs as assessed in the Savvy Analysis) are significantly overstated:
- 116.1. Indeed, if the Project's positive impacts are as great as they are claimed by M.E., then they will be commensurately as great for activity displaced by the Project.
117. As to infrastructure costs (i.e. in relation to wastewater, stormwater, potable water, electric and other utilities, transport), the Savvy Report defers to other expert reports prepared on behalf of the Applicant – i.e. the Inovo Report, and Novo Transport Report:
- 117.1. The Savvy Report concludes that because these other reports indicate that infrastructure requirements have been addressed, this leaves no additional adverse impacts to be assessed as economic costs.⁶¹
118. However, this overlooks a key Project impact, given Savvy's own assumed counterfactual:
- 118.1. If the Project requires expenditures on infrastructures, then it is a cost of the Project if those expenditures are greater than the expenditures required for the

⁶¹ Savvy Report, at pp 44 and 47.

housing and other capacity assumed to be displaced from elsewhere in the counterfactual.

119. To assess the economic significance of this point, it is important to acknowledge certain key features of infrastructure, especially network infrastructure:

119.1. First, infrastructures typically involve major fixed costs, meaning they exhibit strong economies of scale – i.e. the average cost of infrastructure services falls as the infrastructure gets larger (up to a point);

119.2. Second, network infrastructures exhibit network effects, meaning their services improve and/or their service costs fall the more users they have.

120. Both of these features mean that if the Project does not simply displace like-for-like infrastructure investments/capacity elsewhere, the resulting infrastructure costs arising from displacement caused by the Project will be higher than just the Project's own infrastructure costs, e.g.:

120.1. Under the Savvy Analysis counterfactual, with housing growth assumed displaced from multiple smaller centres, it is possible – though not guaranteed – that by concentrating growth in the Project instead, overall infrastructure costs of servicing that growth could in fact be lower due to the Project (by enjoying greater economies of scale and increased network effects):

120.1.1. However, this has not been demonstrated in the Savvy Analysis, and there are particular features of the infrastructures required for the Project that could be higher than for other (even smaller) developments elsewhere – e.g. with each dwelling requiring individual pump stations as well as a central pump station with above-ground holding tanks for wastewater;⁶² and on-site stormwater retention and attenuation also being required;⁶³

120.2. However, as noted in Section 4, I consider an equally if not more plausible displacement counterfactual to involve displacing in-sequence housing growth in nearby urban centres such as Rangiora, Kaiapoi, Woodend and Christchurch:

⁶² Novo Infrastructure Report, at pp 11-12.

⁶³ Novo Infrastructure Report, at p. 15.

120.2.1. In that case, not only will the Project require specific incremental infrastructure investment such as those identified above, but they will displace brownfield infrastructure expansions in larger networks which likely already enjoy superior economies of scale and network effects, and which could most likely be expanded at much lower cost to meet an equivalent amount of housing demand.

121. This means the Savvy Analysis has most likely overlooked a key and significant adverse market impact of the Project – i.e. significant extra infrastructure costs, relative to counterfactual infrastructure costs for the same housing (and other proposed capacity) growth.

122. Finally, the Novo Application Report acknowledges that the subject site supports Canterbury grass skinks, which are an “At Risk – Declining” species, and thus that the Project requires a lizard management plan (**LMP**) to ensure those skinks are appropriately relocated and protected on an ongoing basis on-site:⁶⁴

122.1. Furthermore, the Pattle Report, which sets out the relevant LMP, notes that all native lizard species in New Zealand are absolutely protected under the Wildlife Act 1953,⁶⁵ though it states the LMP’s objective as being no net loss for the affected native lizards⁶⁶ (which appears to countenance gross loss, despite the absolute protection of the relevant skinks under the relevant legislation).

123. The Savvy Report makes no reference to or allowance for two obvious and potentially very significant market or non-market adverse impacts/costs associated with the Project’s LMP:

123.1. First, implementing the LMP will be directly costly, especially if ongoing measures are required to ensure protection of the relevant skinks – more so if additional protected species or greater-than-expected salvage numbers are identified during construction – which are market costs; and

123.2. Second, the fact that the Wildlife Act 1953 absolutely protects native New Zealand lizard species implicitly attaches a very high social cost to each and every such lizard, meaning any loss of skinks or other native lizards due to the Project carries with it a correspondingly high social costs – a non-market impact, but one

⁶⁴ Novo Application Report, at para 26.

⁶⁵ Pattle Report, at p. ii.

⁶⁶ Pattle Report, at p. iii.

obviously important enough for the Wildlife Act to have been passed, and retained in force some 73 years after its enactment.

124. As to the scale of the former costs, in the Bendigo-Ophir gold mine FTAA application an expert for the applicant stated that the cost of relocating lizards from the mine could amount to tens of millions of dollars:⁶⁷

124.1. While I acknowledge there may be scale differences between that project and the Project, this still points to potentially very significant LMP costs for not just relocating, but also protecting on an ongoing basis, any native skinks affected by the Project.

125. This represents another potentially very significant category of Project cost that the Savvy Analysis has not considered:

125.1. Taken together, the Savvy Analysis' omission of housing and retirement village displacement costs, incremental infrastructure costs, and LMP costs, mean the Project costs assessed by Savvy are likely to have been significantly understated – in addition to the other understatements discussed in Sections 6.2 and 6.3;

125.2. As such, any assessment of the Project's net impacts (if not net benefits), after also considering the Project's adverse impacts – based on the Analyses – will be significantly overstated.

6.5 Ignores Likely Adverse Social Impacts During Construction Phase

126. The Savvy Analysis also makes no allowance for likely adverse social impacts of the Project, especially during its 10 year construction phase, including:

126.1. Pressure on local transport networks for workers and suppliers travelling to and from the construction site, including adverse impacts (e.g. increased travel times, possibly increased safety risks) of locals during construction;

126.2. Pressure on local services (e.g. housing, healthcare, education, emergency services, other community services) from construction workers, many of whom are

⁶⁷ <https://www.rnz.co.nz/news/environment/624837/santana-minerals-asked-if-it-will-cover-cost-of-catastrophic-failure-at-proposed-otago-mine>.

likely not to live long-term at the subject site; and

126.3. Noise and other disturbances to neighbours during construction.

127. Such social impacts will be more than transitory, given the Project's expected 10 year construction phase:

127.1. They are also of a type (e.g. travel times, transport safety costs) that – as explained in Sections 5.9 and 6.3 – that are routinely monetised when major public projects are being evaluated, and have also been explicitly quantified as project benefits (when such costs are reduced due to the project) by applicant's economists in certain other FTAA applications;

127.2. As such, they would be appropriately monetised for the Project, but the Savvy Analysis has not done so.

128. The Project's adverse impacts have therefore been understated – and hence its implied net impacts overstated – due to the Savvy Analysis' omission of such costs.

6.6 Only Partially Acknowledges, and Does Not Quantify, Other Project Adverse Impacts

129. The Savvy Report likewise acknowledges, but does not quantify, certain other Project adverse impacts/costs, e.g.:

129.1. Socialised costs due to any required expansion of Ōhoka School – i.e. extra costs incurred by the Ministry of Education, paid by taxpayers (not the Applicant, or solely by residents of the Project's housing capacity), to accommodate demand growth due to the Project – relative to counterfactual school costs.

130. To the above school expansion costs could be added the possible social costs to any communities that suffer roll declines (or attenuated roll growth) due to the Project displacing growth – or even causing population decline – in those communities:

130.1. For example, in-sequence school capacity expansions might be deferred, or school rolls fall below sustainable levels, in such communities due to the Project.

131. This is likely to be more pronounced under the Savvy Analysis' counterfactual, since it assumes growth displaced to the Project will come from multiple small other centres:

- 131.1. It is less likely to occur under my preferred displacement counterfactual, since school rolls and funding in larger urban centres are likely to be more resilient to any displacement effects resulting due to the Project.
132. Similar arguments can be made in terms of healthcare impacts of the Project:
- 132.1. Taxpayer funding for any additional healthcare provision is a social cost (since that funding is diverted from elsewhere) not internalised by the Applicant (or fully by the residents of the Project's proposed housing and other capacity);
- 132.2. The Project may affect the viability of healthcare services in the communities from which any demand for the Project's housing and other capacity is displaced – though, as for schooling costs, subject to the relevant displacement counterfactual.
133. Finally, related to the Project's possible adverse infrastructure impacts/costs, the Savvy Report acknowledges how the out-of-sequence Project might result in (e.g.) a failure of councils to recover in-sequence planned or actual infrastructure costs:⁶⁸
- 133.1. These are potentially significant incremental market costs that the Savvy Report has not attempted to quantify, but which are capable of being quantified in monetary terms;
- 133.2. The Savvy analysis also acknowledges that certain other costs (e.g. transport infrastructure costs) will not be fully covered by the Applicant via developer contributions despite being incremental to the Project,⁶⁹ meaning the remainder of such costs are socialised and therefore affect regional or national (net) benefits.

7. Conclusions

134. In conclusion, it is my opinion that:
- 134.1. The FTAA requires a clear assessment of whether the Project delivers net benefits to New Zealand's social welfare once all costs (including opportunity costs), disbenefits,

⁶⁸ Savvy Report, at p.

⁶⁹ The Novo Transport Report (e.g. at p. 50) details multiple transport infrastructure enhancement required to manage Project impacts, for which development contributions arise.

and adverse impacts are accounted for. In economic terms, this necessitates a CBA, rather than EIA.

- 134.2. The Analyses rely exclusively or primarily on EIA, which assesses Project impacts – not Project benefits as required under s. 3 of the FTAA – and which is known to overstate impacts.
- 134.3. Critically, the Analyses provide insufficient detail to meaningfully assess the Project's impacts (let alone its benefits) – in particular, insufficient detail is provided regarding both the types of housing and other capacity proposed, and the market segments intended to be catered to by the Project.
- 134.4. Equally critically, the Analyses assume diametrically opposite counterfactuals (i.e. assumptions regarding the outcomes that arise absent the Project, against which Project outcomes are compared to arrive at Project impacts/benefits) – this means that if the counterfactual for one of the Analyses is correct, then it is incorrect for the other of the Analyses, so the Analyses taken together cannot be reliable.
- 134.5. The M.E Analysis relies on various FTAA s. 22 referral criteria to demonstrate significant Project benefits, despite s. 81(4) of the FTAA requiring panels to determine the extent of project benefits, and despite the Project – being an out-of-sequence development that displaces in-sequence development – not being consistent with local or regional planning documents, including spatial strategies, as required under s. 22(2)(a)(x).
- 134.6. Many of the qualitative Project benefits claimed in the M.E Analysis do not withstand even minimal scrutiny;
- 134.7. The quantitative Project impacts assessed in the M.E Analysis untenably assume that all of the housing and other capacity proposed by the Project is strictly incremental when I (and Savvy) consider it more realistic that the Project will displace housing and other capacity growth elsewhere – this alone (in addition to EIA inherently overstating impacts) means the M.E Analysis vastly overstates the Project's impacts;
- 134.8. The M.E Analysis further does not account for all relevant Project costs, opportunity costs, or adverse impacts, which also means its assessed Project impacts are overstated;

134.9. The M.E Analysis does not follow standard modelling practice by converting impacts that arise over time into their present value, or by showing how sensitive assessed impacts are to changes in key input variables, allowing for relevant Project uncertainties;

134.10. Even in gross and overstated terms, the Project impacts assessed in the M.E Analysis are immaterial at a regional level (and hence also the national level);

134.11. While the Savvy Analysis partially remedies the M.E Analysis' omissions of Project costs, opportunity costs, and adverse impacts, it inherently understates those adverse impacts/costs due to:

134.11.1. Misapplying RMA framing to consider only certain market costs of commercial centre displacement effects; and

134.11.2. Primarily applying EIA to assess Project adverse impacts/costs, but omitting material market and non-market adverse impacts/costs – despite non-market impacts being routinely monetised in assessments of major public projects, and relied upon as benefits by applicants' economists in other FTAA applications.

134.12. In particular, the Savvy Analysis fails to account for, or only partially accounts for:

134.12.1. The costs of the Project displacing housing and other capacity growth elsewhere (rather than representing incremental growth);

134.12.2. Likely incremental infrastructure costs; and

134.12.3. Likely significant market and non-market costs associated with the Project's required lizard management plan.

134.13. Additionally, the Savvy Analysis does not account for social costs arising during the Project's expected 10 year construction phase (e.g. pressures on transport networks, housing, health and education facilities, other community facilities).

134.14. Finally, the Savvy Analysis acknowledges but does not quantify other adverse impacts/costs of the Project, including possible loss of school or healthcare capacity in communities from which housing and other capacity demand due to the Project is assumed to be displaced.

134.15. In conclusion, the gross impacts of the Project are significantly overstated in the M.E Analysis, while the Project's adverse impacts/costs are significantly understated in the Savvy Analysis:

134.15.1. Since the Project's gross impacts (versus benefits) – even though they are significantly overstated – are not significant at either the regional or national level, its net impacts (versus benefits) after allowing for Project adverse impacts/costs – even though those adverse impacts/costs are significantly understated – are even less significant at either the regional or national level.

134.16. As such, the Analyses do not substantiate significant regional or national benefits due to the Project as required under s. 3 of the FTAA.

Richard Meade (PhD, Toulouse School of Economics)

Principal Economist, Cognitus Economic Insight