Economic impacts of the Delmore development

NZIER report to Vineway Limited

December 2025

About NZIER

New Zealand Institute of Economic Research (NZIER) is an independent, not-for-profit economic consultancy that has been informing and encouraging debate on issues affecting Aotearoa New Zealand, for more than 65 years.

Our core values of independence and promoting better outcomes for all New Zealanders are the driving force behind why we exist and how we work today. We aim to help our clients and members make better business and policy decisions and provide valuable insights and leadership on important public issues affecting our future.

We are unique in that we reinvest our returns into public good research for the betterment of Aotearoa New Zealand.

Our expert team is based in Auckland and Wellington and operates across all sectors of the New Zealand economy. They combine their sector knowledge with the application of robust economic logic, models and data and understanding of the linkages between government and business to help our clients and tackle complex issues.

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Key points

- Vineway Limited has submitted an application for the Delmore development under the Fast-track Approvals Act (FTAA).
- NZIER was commissioned to conduct an economic analysis of the application.
- The analysis used standard approaches: cost-benefit analysis and multiplier analysis.
- The net benefit to the Auckland region of the application over the period 2026 to 2050 is $1.23 billion. The benefit-cost ratio (BCR) is 4.0; for every $1 of cost – infrastructure cost, opportunity cost, environmental cost – the Auckland region has $4 of benefit. These figures are based on construction of 1,203 houses.
- The net benefit to New Zealand of the application over the period 2026 to 2050 is $1.21 billion. The BCR is 4.2; for every $1 of cost, New Zealand has over $4 of benefit.
- The application will have significant regional and national benefit.
- Key parameters were tested, and positive, significant results were obtained in the alternative scenarios, as well.
- The analysis depends on information available at the time. New information could change the results of the analysis.

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1 Introduction and summary

NZIER was commissioned by Vineway Limited to conduct an economic analysis of the Delmore project as part of an application under the Fast-track Approvals Act (FTAA). The analysis has used a standard cost-benefit analysis (CBA) approach to organise and compare the costs and benefits of the application. The economic impacts have been assessed using input-output or multiplier analysis, the uses and limitations of which are discussed in the report. In addition, the analysis includes an assessment of opportunity costs, included as a response to these limitations.

Information on the project came from a site plan (Terra Studio 2025), several economics documents and a personal communications as noted. Further information and data were sourced from government reports and websites, in particular from the New Zealand Infrastructure Commission, The Treasury and Stats NZ. The analysis and results reported here depend on the accuracy of the information used. Should new information or revised data become available, they may affect the results of the CBA.

Selected results from the CBA analysis are as follows:

- The net benefit to the Auckland region of the application over the period 2026 to 2050 is $1.23 billion. The benefit-cost ratio (BCR) is 4.0; for every $1 of cost – infrastructure cost, opportunity cost, environmental cost – the Auckland region has $4 of benefit.
- The net benefit to New Zealand of the application over the period 2026 to 2050 is $1.21 billion. The BCR is 4.2; for every $1 of cost, New Zealand has over $4 of benefit.

The numerical results imply that the application would generate a considerable net benefit for Auckland and New Zealand. The application will have significant regional and national benefit.

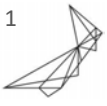
Key parameters were tested, and positive, significant results were obtained in the alternative scenarios as well. The results of that analysis are provided in Appendix E.

The rest of the report provides a discussion of the information used, the analysis frameworks, the detailed benefits and costs, and the final results. A statement about the Code of Conduct is included in Appendix A. Detailed spreadsheets of the calculations are reproduced in Appendix C and Appendix D

2 Selected details of the project

2.1 Introduction

This report describes the potential economic impact of the Delmore housing project by Vineway Limited, the subject of an application under the FTAA. The application describes the project. For this report, a few details of the application are included because they are relevant to the economic analysis. The following is therefore not a complete description of the project or application.



2.2 Size of project

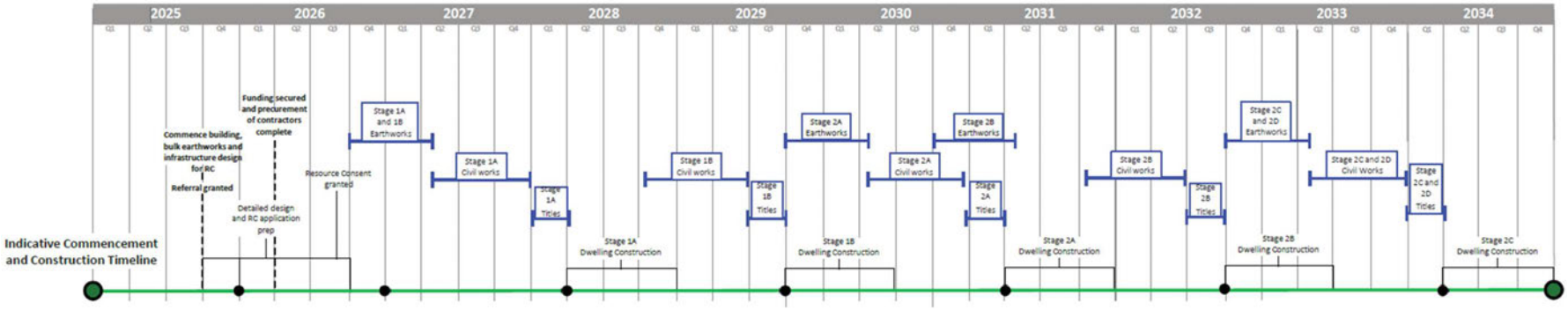
The size of the project can be measured in different ways. One size factor is the number of houses. According to the site plan, the planned number of houses is a total of 1,203, including 578 three-bedroom housing units, 278 four-bedroom housing units and 290 five-bedroom housing units (Terra Studio 2025). An additional 55 units would have bespoke designs, and 12 would be added, subject to the decision about a park in stage 1 (Terra Studio 2025). Most housing units are stand-alone dwellings, but not all (Terra Studio 2025). This analysis assumes that wastewater will be treated on site, so 10 lots would be used for a wastewater treatment plant (pers. comm., [redacted], Myland Partners, 15 December 2025). This assumption reduces the number of houses to 1,203. The site plan indicates that the overall site area is 109.2 hectares, including 43.7 hectares of natural environment at project completion (Terra Studio 2025). The site is on Russell Road and Upper Orewa Road in the Auckland Region. For some purposes, such as investigating rates, this analysis used the indicative address of 88 Upper Orewa Road.

2.3 Timeline

The economic analysis considers the timing of activities and impacts. The indicative timeline in Figure 1 provides an indication of the time required to complete the project. The economic analysis is conducted on the basis of a 10-year construction plan that runs from 2026 to 2035.

The other timing element to consider is the counterfactual. Meade (2025, 4) states the following in the Auckland Council economics peer review: "*the most likely counterfactual in the case that the Application is declined is that residential housing of the sort proposed would simply occur at a later date (i.e. 2050+, as zoned)*". Thus, the timing for the counterfactual in this economic analysis is for the same project to begin in 2051. The interim impacts (the timing difference between the application and the counterfactual) are calculated over a 25-year period.

Figure 1 Indicative timeline for the project



Source: Barker & Associates (pers. comm., [redacted], 12 December 2025)

3 Summary of prior documents

3.1 Key economic documents reviewed

Several documents were reviewed to prepare this report. They include:

- 'Proposed Delmore Residential Development, Hibiscus Coast, Auckland: Economic Assessment', by Urban Economics, dated 13 February 2025.[1]
- 'Memo: Review of Proposed Delmore Residential Development, Hibiscus Coast, Auckland Economic Assessment by Urban Economics – BUN60444768', by James Stewart of Auckland Council, dated 16 May 2025
- 'Delmore Fast-Track: Auckland Council Response: Annexure 2: Economics', James Stewart of Auckland Council, dated 25 June 2025
- 'Delmore Fast-Track: 25/06/2025 – Auckland Council Response: Annexure 3: Economic (Peer Review)', by Dr Richard Meade, dated 25 June 2025
- 'Fast-Track Approvals Act 2024 – Delmore Substantive Application: Technical Addendum', by James Stewart of Auckland Council, dated 18 July 2025
- 'Delmore Fast Track Approvals Act Application – Review of Economic Analyses', by Dr Tim Denne, dated 13 August 2025
- 'Delmore Site Plans', by Terra Studio, provided by Myland Partners as the 12 December 2025 update.

3.2 Urban Economics report

The report by Urban Economics provided background information on the housing market in the area. The main data point from that report used in this CBA is the average sale price of Delmore houses, which is $985,000.

3.3 Documents from James Stewart

The Stewart memo of 16 May 2025 provided information about the position of the Auckland Council regarding the application. It explained some criticisms of input-output analysis (or multiplier analysis). Although it explained that the Delmore application could be displacing other developments rather than adding to the housing supply, it did not account for the relative uncertainty between an actual, existing application versus potential opportunities to design future developments. It raised the issue of increased spending on water infrastructure and trunk infrastructure, but did not provide estimates of those costs. It called for an analysis of costs and benefits of the application, and agreed that "*housing affordability issues may be a cause of net internal migration away from Auckland*" (Stewart 2025c, 3).

The Stewart report of 25 June 2025 provided further detail about the position of the Auckland Council and described a CBA that the applicant could undertake. The report raised several concerns: the displacement of other affordable housing, taking water infrastructure capacity away from other potential users, and higher fuel use and higher emissions by

[1] Being the economics assessment lodged with the first Delmore application that was withdrawn.

residents in the 'fringe location' (Stewart 2025a, 6) of the proposed development. These impacts were not quantified, however. A few potential issues with the report could be noted. First, the report calculated that Delmore would represent just 1.1 percent to 1.4 percent of annual housing growth for Auckland in the period 2018 to 2023, while at the same time suggesting that the development could be a drain on Council resources. Second, it suggested that the development was a 'fringe location' for transport purposes, but did not account for the employment and lifestyle choices of the eventual residents. The location might be convenient for an individual working at (or owning a business in) the Silverdale Mall or the Albany area, or someone whose elderly parent has moved to the Summerset Milldale Retirement Village. Finally, it raised the issue of the Future Urban Zone (FUZ): "*To be more precise, since the area is already identified as FUZ, it implies that the dwellings would be built eventually, so it is not a 'net' addition as such*" (Stewart 2025a, 3). Between now and that eventuality, there are about 25 years of home ownership that should be treated as a benefit in a CBA.

3.4 Documents from other economists

The Meade report provided some useful guidance about how an economic analysis might be conducted. As will be discussed in this report, it suggested that a full CBA be conducted and proposed a useful counterfactual scenario. It also suggested the use of the total economic value (TEV) framework, which is also discussed below. It did, however, advocate for extensive and complex economic analysis that could be more than was required to inform decision-makers about the project's value. It proposed the use of computable general equilibrium modelling and discrete choice modelling, for example, which can be expensive to undertake and complex to explain.[2] The report also focused on the uncertainties involved in producing this specific project, but did not apply the same rigour to other future housing projects.

The Denne report provided a review of prior economic documents related to Delmore. It provided further guidance on the appropriate CBA, tempering some of the suggestions from Meade. It provided a simple housing market model that is used in this report to calculate the benefit of Delmore. The report also discussed the potential use of the Alonso-Muth-Mills (AMM) urban model as a tool for understanding the Delmore development. However, there are issues with using the AMM model in this way. First, the AMM assumes that all people are renters; no one owns their houses, and all property is owned outside the model. A standard AMM model is not appropriate to investigate a 'net improvement relative to renting' (Denne 2025, 9) because everyone is a renter. The AMM model also assumes a city with a single centre, whereas Auckland has multiple centres, and some will be convenient to the Delmore location. The model also tends to assume no change in population (Parker 2021), so it may be inappropriate for the purpose of analysing this situation. The Denne report does suggest that "*the main impact of housing affordability might simply be through the increased housing supply to the Auckland market that Delmore represents*", an idea that is explored further in this report.

[2] Dr Kaye-Blake, the author of this report, is an expert in both forms of analysis. He conducted his PhD research on discrete choice modelling, and has conducted computable general equilibrium modelling for government agencies.

3.5 The example of a shed

The Denne report (Denne 2025) included an example of building a shed to illustrate the CBA process. The example could be expanded. Denne described building a shed and noted that it required resources, principally labour and money. The net benefit of the shed was not the total value of the completed structure, but it must also account for the labour and money used. That labour and money could have gone to other uses. They were therefore costs for the project. To expand on the example: for consent applications and policy analysis, economists are usually asked to compare one scenario with another. In the shed example, we are comparing the 'shed' scenario implicitly with a 'no shed' scenario.

Here is a possible CBA of the shed example. In scenario 1, we are building a shed to store firewood for the winter. In scenario 2, we store firewood outside and cover it with a tarpaulin to keep it dry. Now, we are using the shed to do something, and we are comparing it with an alternative way of doing something similar. We can either spend time and money in the summer to build a shed ready for winter use, or spend a fraction of that on a tarpaulin and have our weekends free. Once winter comes, the scenarios play out. In scenario 1, we go to the shed, get dry firewood and carry it inside. In scenario 2, we uncover the firewood, find the driest pieces, recover the firewood, and take it inside. Scenario 2 is more unpleasant in the winter than scenario 1 and results in firewood that is less fit to burn and produces less heat. The two scenarios can be compared in terms of costs and benefits. Scenario 1 requires more summer labour and less winter labour than scenario 2. Over the years, as the individual has to deal with covering and recovering firewood, the difference in total labour decreases until it reverses. Scenario 1 involves more money to buy the materials for the shed. Over time, the better condition of the firewood means lower heating costs than scenario 2. The CBA question is, which is better? Is it better to spend the labour and money up front for the benefit of accessible, dry firewood, or to save money and time and just use a tarpaulin? The answer will depend on several things. How miserable are the winters? What value does the individual put on summer leisure versus cold fingers in winter? How much time does it take to recoup the time and money spent on the shed? This is on a continuum. If it takes less than one year to recoup the costs, wind and rain make tarpaulins difficult to use and ruin the firewood, and the shed is simple, then it is very likely a good idea. If it takes 'forever' to recoup the costs, then the decision would probably come down to personal preferences about summer and winter conditions.

This example helps with thinking about new housing. It is not just the costs of housing that need to be included. It is also the benefit of having new housing versus the situation without it. The costs need to be included, but so do the benefits.

4 Frameworks for the analysis

4.1 Introduction

This economic analysis relies on existing frameworks. Frameworks are useful for at least two purposes: they can provide a sort of checklist for identifying relevant sources of economic impacts as well as gaps in information, and they provide a way to organise information so that it can be properly analysed. The frameworks underlying this analysis are discussed briefly below.

4.2 Cost-benefit analysis

The overarching framework for the work is cost-benefit analysis (CBA). A CBA framework is a systematic approach to identifying and valuing costs and benefits, and then calculating summary statistics to identify preferred options. Within a CBA, economists can use different techniques to estimate economic impacts. It creates a clear, logical framework so that all the relevant issues have a place in the framework. That way, information and evidence have clear and logical places in the analysis. Any new pieces of information or concerns can also be incorporated into the framework without disrupting the rest of the economic analysis. The steps in the NZIER method are shown in Table 1. In developing the method, NZIER has taken into account advice from the New Zealand Treasury about the use of CBA (The Treasury 2021; 2015)

Table 1 NZIER's CBA method

Ten steps in a CBA
1. Define the problem/opportunity
2. Decide whose benefits and costs count (standing)
3. Select options and specify the baseline (i.e. the 'without') scenario
4. Classify the kinds of benefits and costs and select the measurement indicators
5. Quantify the consequences (via the measurement indicators) over the life of the options
6. Value (attach dollar values to) the benefits and costs
7. Discount future benefits and costs to obtain present values
8. Calculate decision criteria
9. Analyse sensitivity of the results to assumptions
10. Make a recommendation and document the assessment

Source: NZIER

For this report, the focus is largely on identifying impacts, quantifying them, assigning dollar values, discounting the impacts, and calculating the main metrics used as decision criteria.

All present values are calculated using a discount rate of 8 percent per year, per the New Zealand Treasury.

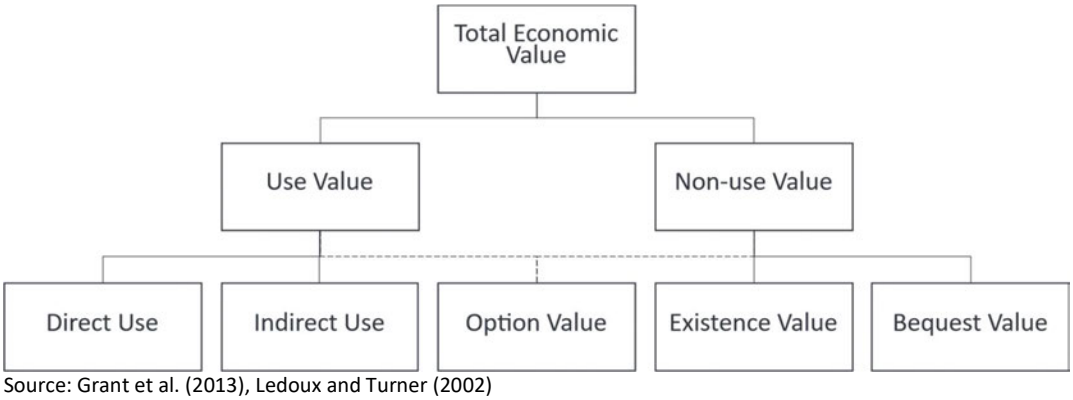
4.3 Total economic value

The CBA framework indicates how to assemble impacts and values into a coherent analysis. It does not indicate, however, what to include in the list of impacts. One tool for considering what to include is the total economic value (TEV) framework. Meade (2025) in paragraph 20 notes, *"Economists have a well-established framework – the total economic value (TEV) framework for depicting the wider range of values to account for in a thorough CBA."*

The TEV framework recognises that objects, goods and resources can provide people with benefits through several channels. In particular, it is useful for moving beyond the market economy to understand economic value more widely. The market economy directly provides use value, especially direct use value. People buy things and use them, deriving a

benefit. For example, they buy houses, and they live in them. Direct use value can also be derived from non-market goods or resources. For example, a walk through a nature reserve is free to the user at the time of the walk, but the person derives use value from the reserve. Ecosystems services, too, can be a form of use value when they provide benefits to individuals. More broadly, ratepayers may be paying to maintain reserves that they have not yet visited but know they can use at some point in the future. They are maintaining an option value to use the reserves, and that option itself has a value. Non-use values capture other types of value. For example, wetlands and their ecosystems may have value to people who has never experienced them; they are happy knowing that the wetlands exist and are supporting the existence of plants and animals. This benefit is considered an existence value.

Figure 2 Total economic value framework



Source: Grant et al. (2013), Ledoux and Turner (2002)

4.4 Resource Management Act

At the time of writing, the Resource Management Act (RMA) is still in force. The FTAA incorporates the RMA. The RMA provides further organisation of the impacts of the application into economic, environmental, social and cultural impacts. These categories reflect that the RMA defines 'sustainable management' of the environment, in section 5, as enabling "*people and communities to provide for their social, economic, and cultural well-being*" while achieving specified environmental outcomes and managing effects. The RMA also offers a broad definition of 'environment', in section 2, noting that it includes:

'(a) ecosystems and their constituent parts, including people and communities; and

'(b) all natural and physical resources; and

'(c) amenity values; and

'(d) the social, economic, aesthetic, and cultural conditions which affect the matters stated in paragraphs (a) to (c) or which are affected by those matters.'

The RMA thus provides categories of impacts that could be included in a CBA.

4.5 Multiplier analysis

The CBA includes the valuation of economic activity, both increased economic activity from construction and displaced economic activity. The method for analysing the economic impacts is input-output analysis, also called multiplier analysis.

In the economy, consumers buy final products. Before the products reach consumers, they are produced by supply chains that take raw materials, process them and assemble final products. Each link in the supply chain takes in inputs and produces outputs, a process captured in input-output analysis. The method uses a table of inter-industry transactions that describes what each industry buys from and sells to the other industries. All the data are expressed in dollar values. The data can be used to create a few simple multipliers:

- Direct value-added multipliers describe how every single industry transforms the inputs that it uses, which is measured as the difference in value between the outputs and the inputs.
- Type I multipliers consider the flow-on effects to the rest of the economy through the supply chains or inter-industry transactions. It shows how economic activity is multiplied throughout the economy.
- Type II multipliers similarly show the wider effects through the economy, but also include the impacts of greater consumption from the increased incomes generated by greater economic activity.

In this kind of analysis, 'output' is the value of the final product. 'Value-added' measures the contribution that industries make by taking inputs and creating outputs that are more valuable. This is roughly equivalent to the contribution to gross domestic product (GDP). Multipliers are the factors that are used in the numerical analysis.

There are well-known limitations to multiplier analysis. They are based on a static view of the economy, in this case, based on data provided by Stats NZ for the year ending March 2020. This creates three main issues:

- There is no technological change or innovation. Whatever technology was in place at the time still drives the economy.
- There are no resource constraints. There are always enough employees and investment capital, as well as raw materials and other inputs. The reverse is that there are also no unemployed resources.
- There are no price changes as resources or employees become more or less available. The cost structure for production is fixed.

The net result of these limitations is that multiplier analysis can tend to overstate the flow-on economic effects of changes to the economy. However, this is well-known, so experts understand that results from multiplier analysis are indicative rather than absolute. In addition, the limitations do not tend to change relative results: economic interventions that are better would still tend to be better using other methods. For this CBA, this is important. In order to overcome these limitations, this analysis includes not just the economic benefit from construction and its multiplier effects, but also the displaced economic activity (the opportunity cost) and its multiplier effects. The relative size of the two parts of the analysis would be the same under multiplier analysis as under other approaches to economic analysis.

5 Cost-benefit analysis – benefits

5.1 More housing

As a framing statement, it is important to note that housing is good and that more housing is better. There are, of course, exceptions, but as a general rule, people like living in houses and even more so in more spacious housing. Economists know this because people pay for houses, and they pay more for bigger houses. This might all seem simplistic, but these fundamentals may have been obscured by some of the disputes about economic analysis.

The impacts of housing extend beyond sales and prices. The TEV framework can capture these impacts: housing has non-market costs and benefits, which can be grouped as social, cultural and environmental impacts. For example, the Infrastructure Commission stated that, "*A lack of quality housing also means that many people live in damp or moldy [sic] homes, experience overcrowding and have poor health and wellbeing as a result*" (New Zealand Infrastructure Commission 2022b, 6). These other impacts can be assigned monetary values in some circumstances.

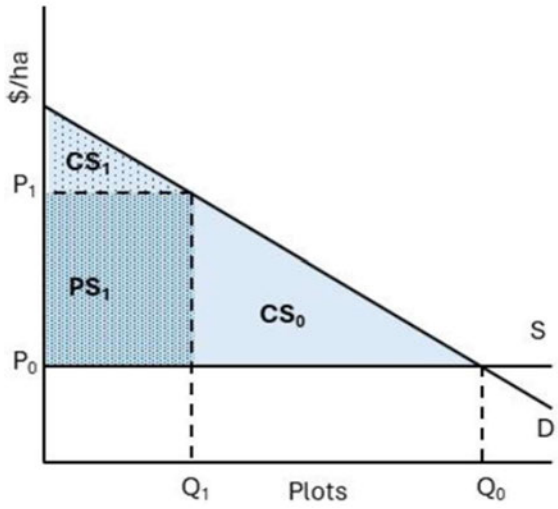
This section presents three methods for estimating the benefits of increased housing supply and more affordable housing in the application. They are:

- A simple supply-demand model
- The value of affordable housing for Delmore residents
- The value to house-buyers in Auckland of a larger housing supply.

5.1.1 Method A: Simple supply-demand model

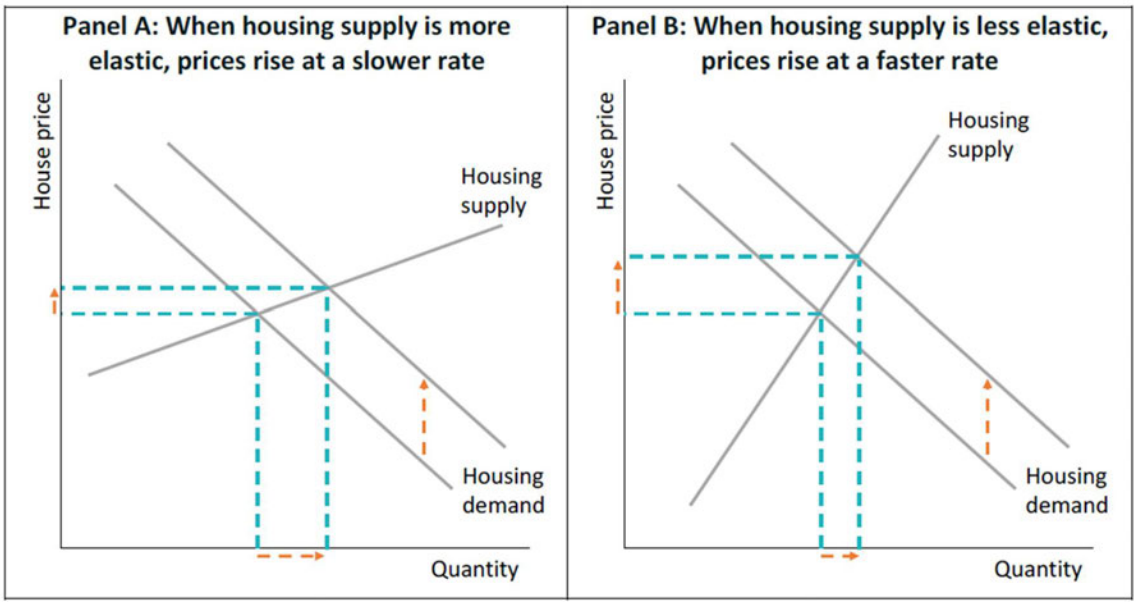
One approach to valuing the benefit of more housing is a basic supply-and-demand model. Denne (2025, 11) has a diagram of a simple housing model, shown in Figure 3, that is helpful for this. However, that model makes the simplifying assumption that the supply of housing is infinitely available at the current price; higher demand would lead to more construction, but would not affect the price. A different diagram comes from the New Zealand Infrastructure Commission (2022b, 12), and it demonstrates the impact of considering the cost of building houses. As Figure 4 shows, housing supply could be elastic or inelastic: it could be easier to ramp up building when there is more demand, or it could be more difficult. What these two panels show is that a flexible, responsive approach to building more housing (Panel A) leads to lower prices increases.

Figure 3 Denne's supply and demand model of housing



Source: Denne (2025, 11)

Figure 4 Infrastructure Commission's supply and demand model of housing



Source: New Zealand Infrastructure Commission (2022b, 12)

Nevertheless, the Denne diagram provides a basis for calculating the benefit of building more houses. This analysis is based on a housing market that represents supply and demand within an average year. The housing supply without Delmore can be represented by Q1 in Figure 3. The housing supply with Delmore can then be represented by Q0. Because greater demand is satisfied, residents' wellbeing increases, as indicated in the diagram by greater consumer surplus (CS0). The area of this triangle can be calculated.

- The application involves approximately 120 new houses per year for 10 years.
- Annual house sales in Auckland are 24,315 (Infometrics 2025a).

- The price elasticity of demand for houses is -0.35 (New Zealand Infrastructure Commission 2022b). This figure relates to the slope of the demand line in Figure 3. Elasticity is the percentage change in quantity divided by the percentage change in price.
- The 120 new houses represent a 0.49 percent increase in the quantity of house sales.[3] Applying the elasticity, the percentage change in price would be a decrease of 1.4 percent.
- At the March 2025 average house value of $1.22 million (Infometrics 2025b), the price reduction would be $17,218.
- The triangle CS0 in Figure 3 has an annual value of $1.04 million (undiscounted) for the 10 years of the project, and the **net present value is $6.95 million**.

In the Denne diagram, there is also a rectangle labelled PS1. Denne notes that this is the scarcity value of land, which is created by land regulation. In this case, this value can be calculated as the reduction in house prices ($17,218) multiplied by annual house sales (24,315). The value of PS1 is $419 million per year for 10 years, and the **net present value is $2.81 billion**. Technically, this is a transfer. It is a transfer from house-buyers to landowners. Landowners receive this additional payment because Auckland Council limits the number of new houses that can be built each year: "*changes to urban planning policies and urban transport speeds explain most, if not all, of the acceleration in house prices*" (New Zealand Infrastructure Commission 2022b, 3).

5.1.2 Method B: Affordable housing for Delmore residents

A second way to assess the value of more housing is the savings for the house-buyers. The applicant has stated that the intention is to sell a reasonable number of houses at prices below the current market average. There are several ways that houses can be produced at lower costs while preserving the profits of the developers. First, if there are positive economies of scale, then the price of each house falls when more are built. One of the known issues with New Zealand construction is the lack of scale (New Zealand Productivity Commission 2021); this development could be scaled up sufficiently to achieve cost savings. Second, there is considerable variation in New Zealand in the management capability and productivity of businesses, even within the same sector (New Zealand Productivity Commission 2023). The Productivity Commission said that one issue was the lack of pressure on businesses to be cost-efficient (New Zealand Productivity Commission 2021). If the applicant intends to be cost-efficient, puts pressure on its employees and contractors, and follows through, it is reasonable to assume that it can reduce costs. The cost savings of house-buyers would indeed be 'free money': benefits to consumers from businesses achieving greater productivity and efficiency.

The size of the cost savings is difficult to estimate. Urban Economics (2025) estimated that houses in the Delmore project would be sold for $305,000 less than the average sale prices in the area. Denne (2025) and Meade (2025) suggested that house-buyers pay lower prices by giving up build quality, proximity to jobs and services, and other amenities. This perspective could be summed up as 'you get what you pay for'. Research on productivity in New Zealand, including in the construction sector (New Zealand Infrastructure Commission 2022a), suggests that this perspective is wrong: we could produce more efficiently if we

[3] An analysis that considers housing stock as opposed to house sales is shown in Method C, below.

paid attention to scale, labour skills, management skills, investment, and innovation (New Zealand Productivity Commission 2021; Conway 2018; Krieble and Kaye-Blake 2024). In the case of Delmore, the question is not whether cost savings are possible, but what they are likely to be.

This analysis is based on the assumption that each house is produced for and costs $100,000 less than it would otherwise cost. This amount is just one-third of the cost savings estimated by Urban Economics, which addresses the points raised by Denne and Meade about comparing like-for-like. This is a direct savings for house buyers and a measure of the benefit of Delmore compared to other housing options. Assuming approximately 120 houses built per year over 10 years, the total benefit is **$80.7 million in net present value**. This number scales up and down in direct proportion to the price difference between Delmore houses and other options.

5.1.3 Method C: Impact of a larger housing supply

The third approach to the benefit of more housing is to consider the impact of Delmore on the total housing supply for the Auckland region.

There is an important issue with this approach. As discussed above and in Denne's review, part of the cost of a house is the artificial scarcity value from limiting housing supply. This is clearest with new home builds. Building the structure has a cost, but the cost of acquiring the land is mostly a transfer from the new owner to the old owner due to artificial scarcity. A lower price for houses is a benefit to buyers but a cost to current owners. So, reducing the price of housing (a benefit) has a wider economic cost. The analysis that follows sets that aside, following the thinking of the Infrastructure Commission that "*we cannot have economically productive and inclusive cities without abundant and affordable housing*" (New Zealand Infrastructure Commission 2022b, 3).

This method calculates the benefit from reducing house prices by increasing the supply of housing in Auckland with the application. It proceeds as follows:

- The application involves approximately 120 new houses per year for 10 years.
- Annual house sales in Auckland are 24,315 (Infometrics 2025a). In 2023, there were 611,895 total dwellings in Auckland (Bade 2025), which was an annual growth of 12,967 dwellings from the 2018 Census (Stewart 2025a), or 2.1 percent per year. This analysis assumes that the growth rate continues until 2050.
- The price elasticity of demand for houses is -0.35 (New Zealand Infrastructure Commission 2022b). This figure relates to the slope of the demand line in Figure 3. Elasticity is the percentage change in quantity divided by the percentage change in price.
- As the Delmore houses come onto the market, they will lower the price of houses in Auckland (Denne 2025, 9), or the effects could expand beyond the region (Meade 2025, 5). Keeping to Auckland, the maximum impact is in year 10 when all Delmore houses are complete. They will reduce house prices in Auckland by 0.44 percent. At the March 2025 average house price of $1.22 million (Infometrics 2025b), the reduction in year 10 would be $5,320. The average reduction from 2026 to 2050 would be $3,958. This analysis assumes that the demand for housing in Auckland stays constant.

- Applying that reduction to annual house sales, the impact in year 10 would be savings of $127 million (not discounted) for home buyers. The average annual impact would be $96.2 million from 2026 to 2050 (not discounted).

Using this method, the value of a greater housing supply for Auckland from the application, which represents about 0.15 percent of Auckland housing at the peak in year 10, would be **$904 million in present value terms**.

5.1.4 Summary of the benefits of more housing

The calculations have provided quite different results. They depend on some assumptions, but crucially on how widely the impacts are felt and whose benefits are included in the CBA. A narrow view of benefits for Delmore residents produces a value of $6.95 million (NPV). An assessment of the direct value of affordability to Delmore residents produces a value of $80.7 million (NPV).

But Delmore is one set of houses in a local, regional and national market, a point made by others (Meade 2025). If a restricted housing supply has led to higher prices, as the New Zealand government argues (New Zealand Infrastructure Commission 2022b), then more houses should lead to lower prices. Those lower prices would apply across the board in a housing market, whether that market is considered locally, regionally or, indeed, nationally. Taking a regional view for the CBA, the value of additional housing is $904 million (NPV).

Finally, there is the issue of who pays and who benefits from restricted land supply and higher housing prices. New buyers pay higher prices for houses, and existing landowners benefit. An uncompetitive land market produces unearned rents for landowners (Parker 2021). Without Delmore, $2.81 billion (NPV) of unearned rents will be transferred from new home buyers to existing landowners.

For this CBA, the regional value of additional housing will be used: $904 million (NPV).

5.2 Construction activity

Construction of housing at the Delmore site will involve considerable economic activity. This activity is a benefit to Auckland and New Zealand. To determine the size of the economic benefit, the CBA uses multiplier analysis.

The output value of the construction activity is estimated as the number of houses constructed each year multiplied by the average house price. This results in an annual output value of $118 million (undiscounted). Residential building construction has a direct multiplier of 0.22, which means that 22 percent of the gross value of output represents the GDP impact. The direct GDP impact from one year of house construction at Delmore is therefore $25.9 million.

That activity has further flow-on effects. They are summarised by Type I and Type II multipliers, which are different for Auckland compared to the whole of New Zealand. The resulting annual figures are:

- Auckland region
  - Type I (direct and indirect) impacts: $101 million. Construction generates large flow-on impacts through the economy.
  - Type II (direct, indirect and consumption) impacts: $149 million.

- New Zealand
  - Type I impacts: $94.1 million. The national impacts are lower due to displacement effects.
  - Type II impacts: $133 million.

These annual figures can be used to calculate the total, discounted contribution of increased construction activity over the 10 years of the project:

- Auckland, Type I: $679 million
- Auckland, Type II: $1.00 billion
- New Zealand, Type I: $632 million
- New Zealand, Type II: $892 million.

These figures represent the economic benefit from construction activity from the application. They are included as benefits in the final CBA calculations.

5.3 Infrastructure

5.3.1 Water infrastructure

On-site provision

The main option for water and wastewater infrastructure is to provide it on-site. For the purpose of the CBA, this on-site infrastructure needs to be assessed from the perspective of the regional economy. The benefit of the water infrastructure is included in the benefit of housing; water and wastewater supply is a standard part of the package for housing in urban areas.[4] The next section of the report focuses on costs, but the cost of supplying that benefit is a direct cost to the project and has been estimated as follows (pers. comm., [redacted], Apex Water, 16 December 2025):

- Wastewater opex – $300,000 to $350,000 per year
- Water opex – $100,000 to $150,000 per year.

The total value of those costs from 2026 to 2050, including discounting, is $4.8 million.

Off-site connection

Regarding the other option of connecting to regional water infrastructure, Auckland Council raised the issue that Delmore is out of sequence with respect to land planning in the area. The argument is that the housing at Delmore is not additional housing, but simply taking the place of another project. Auckland Council's conclusion is that Delmore has no additional value.

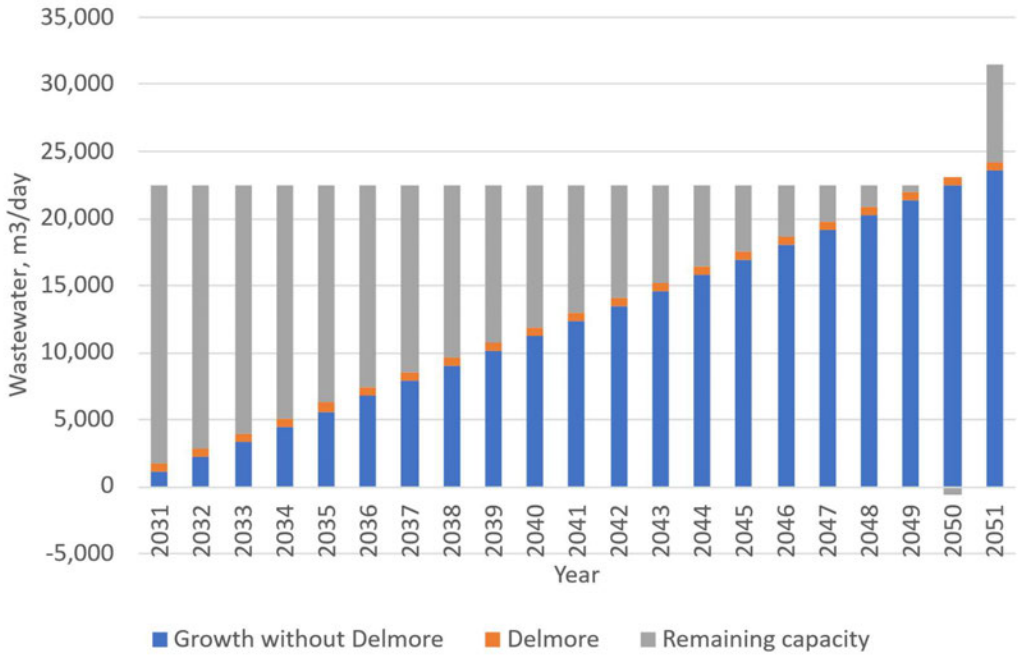
Delmore offers the opportunity to use infrastructure sooner and therefore more efficiently, if, of course, the development connects to the public infrastructure network. It is noted that the applicant's current primary proposal is for on-site servicing, however this issue is still addressed to demonstrate the benefits derived from connecting to the network which is an option the applicant would like to retain. This use translates directly into economic benefit as charges paid to Watercare. The analysis that follows demonstrates two things.

[4] Most goods and services that consumers buy can be treated as bundles of attributes. 'Housing' is a bundle of attributes that includes protection from weather, storage and water, among others.

First, the wastewater needs of Delmore amount to less than seven months of housing growth in the context of wastewater infrastructure planning. Second, the shortfall in infrastructure occurs at the end of the planning period, only after capacity is completely filled. As a result, planners have time before 2050 to adjust their planning, and they receive decades of additional rates and charges in the meantime.

The figure below demonstrates that Delmore housing is a minor concern in the context of wastewater infrastructure for the area. The Army Bay wastewater treatment capacity of 22,500 m^3/day is planned to be online by 2031. A later Stage 2 upgrade is scheduled for after 2050, and is here shown as occurring in 2051. The Army Bay capacity can be allocated evenly across the time period before the Stage 2 upgrade. That average capacity growth is 1,125 m^3/day. Using average rates of water use (between 140 and 175 litres per person per day (Watercare 2024)), a conversion factor for wastewater (78.5 percent (Watercare 2025)), and the number of houses and bedrooms in Delmore, the estimated wastewater from the completed development is 591 m^3/day. In Figure 5, the planned growth in capacity is shown in blue, and the planned excess capacity is shown in grey. The impact of Delmore is shown in orange between the planned use and excess capacity. The figure shows that the houses in Delmore do not cause wastewater capacity to be exceeded until the last year before the next capacity upgrade. The reason for this is that Delmore represents less than seven months (591 m^3/day divided by 1,125 m^3/day) of capacity.

Figure 5 Wastewater capacity and usage, 2031–2051



Source: NZIER

In the meantime, while Delmore houses are using wastewater capacity that would otherwise not be used, they are paying Watercare charges. Those charges are estimated to be $1,183 annually for 3-bed houses, $1,474 annually for 4-bed houses, and $1,765

annually for 5-bed houses, all GST exclusive.[5] At full development, Delmore would be paying $1.67 million in Watercare charges annually.[6] The total value of those charges from 2026 to 2050, including discounting, amounts to $12.1 million. That would be the direct financial benefit of better use of regional water infrastructure. The money could also be used to defray any costs involved with connecting the development to water infrastructure.

Because the on-site option is the preferred option, these values are not used in the CBA. However, they are included in this discussion to provide a sense of their magnitude.

5.3.2 Auckland Council rates

The impact of Auckland Council rates can be calculated similarly. In the Auckland Council material, it was noted that allowing the development would entail additional costs for the Council. However, the extra rates were not included to offset those costs. The annual value of rates, once Delmore is fully developed, is estimated at $3.45 million. This figure accounts for the median value of houses in Delmore, the Council's Uniform Annual General Charge (UAGC), general rates, and targeted rates for the 1,203 houses. The application is to start building houses now, rather than waiting until after 2050. The extra 25 years of rates amounts to $24.9 million of rates (net present value). Any cost indicated by the Council should be offset against this benefit that it will receive.

5.3.3 Road infrastructure

The documents reviewed discussed the issue of roading with respect to the application. Stewart (2025b) indicates that roading will be required and will cost money. There appear to be two issues with regard to roading:

- The part of the road in the development (NoR 6), which the applicant proposes to fund at a cost of $10 million
- Additional roading required outside the development to connect it sufficiently to the roading network. The document notes "*significant costs implications*" but does not provide a dollar value (Stewart 2025b, 5).

The document describes the $10 million as "*a transfer because one part gains $10 million at the cost of another*" (Stewart 2025b) and cites the Treasury as an authority on the matter (The Treasury 2015). This is not, as stated, the correct "*societal view (for CBA)*" (Stewart 2025b) of the situation. The full analysis of the situation should consider the benefit of the road against the cost of providing it. The cost has been established: $10 million. That is a cost borne by the applicant. The benefit, though, has not. The benefit is the usefulness of the road to the people who use it. In fact, using the TEV framework as recommended by Meade (2025), the Total Economic Value includes:

- Direct Use Value for the people who use the road, plus

[5] Other estimates of charges are available:

Source	3 bed unit	4 bed unit	5 bed unit
EcoMatters	$1,344.10	$1,673.50	$2,002.90
BRANZ	$1,599.12	$2,013.53	$2,427.93

[6] For the purpose the calculation, the 67 unspecified units are treated conservatively as 3-bed houses, making the total number of 3-bed houses for the analysis 645.

- Indirect Use Value for all other road users indirectly affected, plus
- Option Value that everyone has of potentially one day using the road, plus
- Existence Value derived from knowing that the road exists and people can access the roading network.

The value of this section of road could be established. Researchers could investigate each of these values, conduct surveys of road users and non-users, calculate benefit transfer to relate the value of other roads to the value of this road, etc. The work involved could be considerable. This work has been described for two reasons. First, it is simply not true that the value is necessarily $10 million. That amount is the cost of supplying the road, not the benefit derived nor the demand for the road. Second, this is intended to be an *argumentum ad absurdum* that precisely valuing every impact is unlikely to shift the balance for the decision regarding the application.

Two sections of roading are included in this CBA. The cost of building the road within the development is treated as both a cost and as a measure of the benefit of the road. That value is $10.6 million (Appendix A). The cost of building the road to Russell Road is also treated as both a cost and a benefit. That value is $15.6 million (Appendix A). From the perspective of the economy or from a social CBA perspective, resources will be used to create the roads; these are costs. The output will be roads that people can use, which is the benefit of the roads. 'People' include both residents, who have helped pay for the roads by buying houses in the development, and non-residents, who might be visiting, or considering buying in the area, or learning to drive, or otherwise using the roads. For the CBA, the benefits are set equal to costs in the absence of other data. The net effect is that the net benefit is nil and the benefit-cost ratio is 1.0. This ratio, which will be discussed later, indicates that the project is worth doing at the margin.

The value of the second piece of roading could be discounted to present value if it is expected to be built several years in the future.

This analysis has not accounted for future costs of maintaining the roads. Those costs could be estimated and included in the CBA. Those costs would also be offset by the rates paid, as discussed above.

5.4 Development contributions

Development contributions are charges to developers intended to defray the public costs of providing infrastructure and services. There is no doubt that creating a new development and building new houses incurs costs for the Auckland Council. However, the development also creates revenue for the Auckland Council. One of those sources of revenue is development contributions. This revenue is a benefit to the Auckland Council.

The development contributions are itemised in Table 2. The total development contributions per housing unit are $24,066 (based on the 2025 development contributions policy). For the total development of 1,203 houses, the total development contributions are $28.9 million.

For this CBA, the benefit of the $28.9 million in development contributions is not included. The reason for the exclusion is that the documents provided do not give a full accounting of all the costs involved. Including the benefit without its related costs would overstate the application's net benefit. However, this calculation of development contributions is

included so that, when discussions arise about the costs to be borne by the Auckland Council, there is information about the benefits that will accrue as well.

Table 2 Development contributions per housing unit

For the Delmore project

Item	Value
Auckland-wide	
Reserve acquisition	$432
Reserve development	$25
Transport	$8,814
Community infrastructure	$633
Sub-regional	
Northern Greenfield Reserve Acquisition	$1,410
Stormwater	n/a
North Transport	$2,272
Community infrastructure	n/a
Local	
Upper Orewa/Dairy Flat Reserve Acquisition	$2,165
Upper Orewa/Dairy Flat Reserve Development	$227
Dairy Flat/Wainui/Silverdale Stormwater	n/a
Dairy Flat/Wainui/Silverdale Transport	$8,088
Silverdale/Dairy Flat/Wainui Community Infrastructure	n/a
Total Development Contributions	**$24,066**

Source: [redacted], Barker & Associates, pers. comm., 30/11/2025

5.5 Non-market benefits

5.5.1 Environmental impacts

One environmental benefit of the development will be the creation of new wetlands. The masterplan for the development notes the creation of 2,400 square metres of wetlands in Stage 1 and 1,331 square metres of wetlands in Stage 2, for a total of 3,731 square metres. The CBAx tool maintained by the Treasury puts a value on the 'Cost of replacing wetland ecosystem services with physical infrastructure – per hectare' of $71,503 (The Treasury 2025), or $7.15 per square metre. This figure represents the replacement cost of losing an area of wetlands. The value of the removed wetlands is $26,678. The CBA treats this value as occurring in year 10 when the development is complete, so the present value is $12,357.

5.5.2 Social impacts

In the AMM model of housing, people both rent housing and use their money for other things. In the model, people trade off attributes of their housing against other things they can do with their money. These attributes can be house size and distance to the city centre,

but in theory, they could also include aspects of health. Individuals might be willing to trade off healthier housing for larger houses, for example. In the real world, of course, people have income constraints that limit their housing choices, and the housing stock is also limited. Observed choices provide information about people's preferences, but only after accounting for those other limitations.

The health effects of housing have an 'internalised' fraction and an 'externalised' fraction. The internalised fraction is the part that affects the individual making the decision. A person can decide to rent a cheaper, unhealthy house, and then suffer from colds and allergies. The externalised fraction imposes a cost on everyone else. The person in unhealthy housing may require more medical care, which is provided by the public healthcare system funded by taxpayers. That person may also be more likely to be a vector for disease, e.g. more likely to get a cold and therefore more likely to pass it on. This externalised fraction is a social cost.

In theory, avoiding these externalised costs is a benefit of new, better housing that replaces old, unhealthy housing. This CBA does not include this social benefit. Calculating the value would require information about the costs of unhealthy housing and a comparison of the Delmore houses with the stock they are supplanting or the prior housing of Delmore residents. However, this benefit is noted so that it can be included in considering the net effect of the application.

To give a little more information on the potential impacts of healthier housing, some information on the situation in New Zealand is provided. Improved housing-related health outcomes can generate substantial avoided healthcare costs. Evaluations of housing warmth and quality interventions in New Zealand show significant reductions in hospitalisations and pharmaceutical use. The *Warm Up New Zealand* evaluation estimated health system savings of $75–$168 per household per year, depending on whether all hospitalisations are included or only circulatory and respiratory conditions, most plausibly linked to cold and damp housing (Barnard et al. 2011). Consistent with this, the *Healthy Homes Initiative* interim outcomes evaluation found that, for a cohort of 10,326 children from unique families drawn from a higher-needs, lower-income population, approximately $10.4 million in direct medical costs were averted in Year 1, rising to $29.5 million over Years 1–3 (Pierse et al. 2019).

The social impacts are not included in the CBA. However, it is important to note that improved housing does benefit society, and the economic value of that benefit has been investigated in prior research. If necessary, further assessment could estimate the impact of Delmore in this area.

6 Cost-benefit analysis – costs

6.1 Introduction to cost analysis

One concern raised in documents by Stewart, Meade and Denne was the lack of calculation of costs in the analysis by Urban Economics. For example, Stewart considered that the input-output or multiplier method "*may overstate the economic benefits by not fully accounting for opportunity costs, displacement effects, and resource constraints*". Stewart, for example, considered that the 7,750 full-time equivalent (FTE) job years should be treated as a transfer rather than an increase in total employment. The implication is that

the Urban Economics report focused solely on benefits, whereas a cost-benefit analysis should consider both costs and benefits. This section considers the costs involved in producing the Delmore project so they can be compared with the benefits. In particular, the focus is on:

- Resident charges
- Displaced agricultural production, which is an alternative use of the land resource
- Opportunity cost of resources used in construction, focusing on the reallocation of labour and associated capital from the rest of the economy.

Including costs in the analysis allows the calculation of net benefit rather than gross benefit, providing an indication of the total benefit to Auckland and New Zealand. It also allows the calculation of benefit-cost ratios, which provide an indication of the relative benefit compared to costs incurred.

6.2 Resident charges

One concern expressed in the documents was that the lower house prices would be offset by "*fees likely to be levied by a Delmore residential society (equivalent to a body corporate for an apartment block) to fund the costs of on-site wastewater treatment, ecological management and potentially other costs, such as roading*" (Denne 2025). The economic argument is that 'there is no free lunch': the benefit of affordable housing, infrastructure and ecological amenities must be funded by an offsetting cost. A CBA framework is ideal for investigating this concern and is simply a matter of making the necessary calculations.

One possible annual fee for the residential society is $4,000 per housing unit ([redacted], pers. comm., 10 Nov. 2025), which was provided as a provisional figure. This figure is the high end of the range of suggested charges, making these calculations conservative in the context of the CBA. When all 1,203 houses are built and sold, total annual charges for the development would be $4.81 million (no discounting). The net present value of the resident charges from 2026 to 2050 is **$34.8 million.**

6.3 Displaced agricultural production

The housing will be on land that could be used for agricultural production. One cost of the project is the opportunity cost of this lost production. A simple assessment can be made with the following information:

- Total overall site area – 109.2 hectares
- Non-productive area (estimated from the 'Retained wetlands/streams/riparian' in the masterplan) – 43.7 hectares
- Productive area/effective farm area – 65.5 hectares
- Class 5 North Island Finishing Northland-Waikato-Bay of Plenty, gross farm revenue per hectare effective area – $2,122.35 (Beef + Lamb New Zealand 2025).

For this report, no assessment was done of the actual property or its productive potential, nor were any farm financial documents for the property reviewed. The Class 5 production figure provides a useful benchmark of the productive potential of the land. Class 4 has a lower average revenue per hectare of $1,412.09, which relates to North Island Hill Country (Beef + Lamb New Zealand 2025). Other productive uses could be contemplated, but they

would require capital investment to achieve. A full analysis of alternative land uses, including business plans, financial forecasts and cashflow projections, is outside the scope of this report.

With the above information, the estimated opportunity cost of lost agricultural output is $139,013 per year. Using multiplier analysis with multipliers for the 'Sheep, beef cattle, and grain farming' industry, that output figure translates into the following annual impacts:

- Direct impact on GDP of $59,119
- Direct and indirect impact on **GDP** for the Auckland region of $98,204
- Direct and indirect impact on **employment** for the Auckland region of 0.60 FTE.

Over the 25 years from 2026 to 2050, the total discounted opportunity cost of displaced agricultural production amounts to **$1.0 million of direct and indirect GDP impacts**.

6.4 Opportunity cost of resources used in construction

Construction of the Delmore project will involve economic resources – labour and capital – that could be used elsewhere in the economy. Stewart considered that the jobs calculated in the Urban Economics report were a transfer of workers from one job to another rather than an increase in employment. Furthermore, a criticism of multiplier analysis in general is that it assumes resources are freely available at no cost, thereby overestimating economic benefits. To address these criticisms, this analysis assesses the opportunity cost of shifting resources into construction in Auckland and removing them from the rest of the economy.

Before presenting the calculations, two economic points should be made. First, the idea that the new construction jobs are simply displaced employment and that those workers would otherwise be employed ignores the issue of the productivity of those jobs. Some jobs are less productive than others. They produce less value-added or contribute less to GDP than other jobs. In general, jobs that involve working with a lot of expensive equipment produce high value-added; mining and petroleum sector jobs are paradigmatic of this sort of employment. In addition, building projects on a larger scale can involve productivity gains; the lack of scale is a known problem in the New Zealand economy (Conway 2018; Krieble and Kaye-Blake 2024). By contrast, many service sector jobs, including some jobs in retail and hospitality, produce low value-added. One challenge for New Zealand is increasing total productivity by shifting workers from low-value-added jobs to higher-value-added jobs. Thus, only focusing on the number of people employed without thinking about their productivity is missing the economic story.

Second, whether there is an increase in overall employment involves an underlying assumption about how the economy works. One view of the economy starts with the assumption of full employment. It assumes that the number of people in the workforce is essentially a fact of demography, and that this exogenous number of workers is then fully employed by a labour market in equilibrium. A different view of the economy considers the dynamic situation of businesses and workers that are sometimes underemployed, sometimes overstretched, and occasionally in a 'just right' situation. More workers can be enticed into the workforce (or retained) with the right pay and conditions and the right wider social and economic conditions. Importantly, Stewart's assertion that the 7,750 FTE jobs are a transfer is an assumption about the way the economy works. It is not the conclusion from an analysis.

To provide an analysis of the situation, this report estimates the opportunity cost of shifting resources out of the general economy into construction. This is accomplished by conducting another multiplier analysis, but this time considering the average productivity of the whole economy. First, the value of the economic resources used for the Delmore project is calculated the same way for both benefits and costs. The total value of housing is a function of the number of houses (1,203), the average sale price ($985,000), and the number of years planned for the project (10). The value of the output is $118 million per year, and the value-added component of that output is $25.9 million per year. The value-added component represents payments to the factors of production in the economy, generally modelled as returns to capital and labour. They are therefore a measure of the resources pulled out of the rest of the economy to work in the construction sector to produce the Delmore project.

Multiplier analysis can be used to calculate the contribution those resources would have made to the total economy had they not been shifted into construction. This is the opportunity cost of those resources. The calculation involves weighted average multipliers across the whole economy, compared to multipliers just for the construction sector. The result is the following:

- Direct impact on GDP is the same, $25.9 million per year for 10 years.
- Direct and indirect impact on GDP is $51.2 million annually if those resources are used in the whole economy, compared to $101 million annually if those resources are used for the Delmore project.

The multiplier effect through the economy is larger than average for construction because it is more productive than the average across the economy. Putting resources into construction creates more value than average. This section of the analysis is focused on the opportunity cost of those resources. **The opportunity cost, considering the Auckland region and the direct and indirect impact on GDP, is $51.6 million annually** for 10 years (undiscounted).

6.5 Infrastructure costs

6.5.1 Roading infrastructure

There are a few infrastructure costs to consider. As discussed above, the roading infrastructure can be treated as both a cost and a benefit. It is a cost to produce, and then people who use the infrastructure derive a benefit. For this CBA, the benefits are estimated as equal to the costs. The benefits estimated in section 5.3.3 on page 17 apply to the costs as well: the cost of roading outside the development has been estimated at $15.6 million (Appendix A). There would also be ongoing costs for road maintenance, which have not been included in the CBA.

6.5.2 Water infrastructure

As discussed above, the main option for water infrastructure is to provide it on-site. In that case, the costs have been estimated as follows (pers. comm., [redacted], Apex Water, 16 December 2025):

- Wastewater opex – $300,000 to $350,000 per year
- Water opex – $100,000 to $150,000 per year.

The total value of those costs from 2026 to 2050, including discounting, is $4.8 million. If the cost for water infrastructure are expected to be included in the residential charges, then it will be important not to double-count the cost. Either the direct cost or the relevant portion of the residential charge should be included.

6.5.3 Other infrastructure

No other infrastructure costs are included in the CBA. If any other public infrastructure costs are included, it would be important to include the offsetting benefit or income as well, *viz.,* the development contributions, whose present value is $16.6 million.

6.6 Non-market costs

6.6.1 Environmental impacts

One environmental cost of the development will be the removal of wetlands. The masterplan for the development notes the removal of 748 square metres of wetlands in Stage 1 and 338 square metres of wetlands in Stage 2, for a total of 1,086 square metres. The CBAx tool maintained by the Treasury puts a value on the 'Cost of replacing wetland ecosystem services with physical infrastructure – per hectare' of $71,503 (The Treasury 2025), or $7.15 per square metre. This figure represents the replacement cost of losing an area of wetlands. The value of the removed wetlands is $7,765. The CBA treats this value as an up-front cost, so the present value is $7,765.

6.6.2 Social and cultural impacts

The documents reviewed indicate several potential social or cultural impacts that could impose costs. However, there is no indication of whether costs are internalised or are externalities. Impacts borne by Delmore residents are likely to be internalised (they bear the costs themselves), so they will be part of a personal cost-benefit calculus. The externalities are more important from a social CBA perspective.

The process for putting economic values on these impacts follows the CBA process:

- Identify impacts
- Quantify impacts
- Value the quantified impacts.

The table below notes the impacts that were identified in various documents and provides some commentary on the potential magnitude of the impacts. The documents have tended not to quantify impacts. Regarding quantification, one important observation is that the number of houses proposed in Delmore is small compared to house building and housing growth in the region, being 1.1 percent to 1.4 percent of annual housing growth (Denne 2025; Stewart 2025a). Therefore, it stands to reason that any increased demand on public facilities or public amenities from the increased population associated with Delmore must also represent a small fraction of their use. The table below provides some comment regarding impact quantification, as well.

Table 3 Possible quantification of impacts

For impacts identified in documents

Type of impact	Comment
Parks and open spaces; public facilities	The demand for parks and open spaces outside of those to be provided as part of the development might increase by a small amount, given that the development represents a small fraction of annual growth in Auckland.
Flood risk	The flood risk has not been assessed for this report.
Pest/weed control	The applicant has offered measures to mitigate pests and weeds. The question of whether they are enough to reduce impacts to a minimal level is outside the scope of this report.
Noise control	There could be noise impacts from construction. They will occur during the period of construction and affect a small number of people. The value could be calculated with more information.
Congestion	It is not clear whether the fringe location is positive or negative for congestion, because the lifestyles and employment of residents have not been determined.
Waste	Waste is user-pays. Any increase in waste costs is offset by waste charges.

Source: NZIER

The exact calculation of the economic value of those impacts is not provided here, but it could be calculated with additional data. Some examples of how to value the impacts are presented here. The impacts identified cover a range of social, health, and environmental effects associated with transport activity and urban development. The values draw on established New Zealand CBA guidance and published research and are used here to illustrate the presence, scale and direction of social impacts, rather than to undertake a formal quantitative calculation.

- **Congestion** impacts represent the additional cost that each extra vehicle trip imposes on the road network during peak periods when capacity is constrained. These are measured either as a marginal congestion cost of $7.86 per additional peak-period vehicle trip (Wallis and Lupton 2013) or as an average annual household cost of increased congestion in Auckland of around $3,000 per household per year (adjusted to 2026 values), based on *The Costs and Benefits of Urban Development* (MRCagney 2019) as implemented in CBAx (The Treasury 2025). These values capture time delays, reduced reliability and broader network inefficiencies.
- **Physical health** benefits from walking are measured as a benefit of $10 to $13 per pedestrian kilometre, based on values from the *Monetised Benefits and Costs Manual* (NZ Transport Agency Waka Kotahi 2025). These values reflect reductions in mortality and morbidity for new or increased walkers and represent a positive social impact associated with improved walking infrastructure, such as the Nukumea walking track and lookout points.
- **Carbon emissions (shadow carbon price)** impacts are measured using a shadow carbon price applied to vehicle emissions, based on typical light vehicle emissions of 171 grams of CO_2 per kilometre and a shadow price of $107 per tonne of CO_2-e. This represents the social cost of greenhouse gas emissions, with impacts treated as a national redistribution effect even where emissions change locally (New Zealand Government 2021; Metcalfe and Peeters 2025).

- **Noise** impacts reflect the disamenity experienced by households from increased road traffic noise and are measured as a cost of $495 per household per decibel per year, based on values from the *Monetised Benefits and Costs Manual* (NZ Transport Agency Waka Kotahi 2025). These values capture impacts on wellbeing, disturbance and residential amenity.
- **Air pollution** impacts are measured per tonne of key transport-related pollutants using urban health cost estimates, including $853,824 per tonne for $PM_{2.5}$, $865,797 per tonne for NOx, $4.87 per tonne for CO, $1,545 per tonne for volatile organic compounds, and $39,334 per tonne for SO_2 (all in 2021 NZ dollars). These values are sourced from the Ministry for the Environment's health impact studies (Kuschel et al 2022) and NZ Transport Agency Waka Kotahi guidance (2025) and reflect the social and health costs of exposure to transport emissions, particularly in urban areas.

The above discussion has two purposes. First, it demonstrates that it is possible to put economic values on these impacts once they are quantified more precisely. Second, it provides some values for the impacts, which gives a notion of the value of these impacts in comparison to the value of other impacts discussed in this report.

7 Cost-benefit analysis – results

7.1 Key finding from the CBA

The numerical results from the CBA analysis are shown below. The implication of the numbers is that the application would generate considerable net benefit for Auckland and for New Zealand. That is, the application will have significant regional and national benefits. This result holds even with testing of key parameters, the results of which are provided in Appendix E.

7.2 Results for Auckland

The benefits and costs discussed in this report can be combined to calculate key metrics for the application. Table 4 provides a summary of the results discussed in the report. Benefits include increasing the housing supply, the economic benefits of more construction activity, and the benefits of increased rates from 2026 to 2050. Benefits also include the environmental benefit of increased wetlands, but the value is less than $0.1 million, so it is shown in the table as zero. Costs include the resident charges, the cost of infrastructure and the opportunity cost to agriculture and the wider economy. The net benefit to the Auckland region of the application over the period 2026 to 2050 is $1.23 billion, considering direct and indirect economic impacts. If consumption impacts are included for the economic impacts analysed with multiplier analysis, which includes the benefits of construction and the opportunity costs for agriculture and the wider economy, then the net benefit is $1.38 billion. The benefit-cost ratio (BCR) for the former case is 4.0, and for the latter case is 3.4. That is, for every $1 of cost – infrastructure cost, opportunity cost, environmental cost – the Auckland region has $3 to $4 of benefit.

Table 4 CBA results – Auckland Region

For the Delmore application

	Direct and indirect impacts ($m)	Including consumption impacts[a] ($m)
Benefits		
Higher housing supply	903.8	903.8
Auckland rates	24.9	24.9
Road inside development	10.6	10.6
Road outside develoment	15.6	15.6
Construction impacts	679.1	1,001.1
Environmental benefits	0.0	0.0
Total benefits	**1,634.0**	**1,956.0**
Costs		
Resident charges	34.8	34.8
Road inside development	10.6	10.6
Road outside develoment	15.6	15.6
Opportunity cost, agriculture	1.0	1.3
Opportunity cost, wider economy	343.4	513.5
Environmental costs	0.0	0.0
Total costs	**405.4**	**575.8**
Net benefit	**1,228.6**	**1,380.2**
Benefit-cost ratio (not $m)	**4.0**	**3.4**

[a] Consumption impacts included only for construction, agriculture and wider economy impacts.
Source: NZIER

The largest source of benefit is the value of a higher housing supply. As discussed above, the New Zealand Infrastructure Commission has shown that restrictive policies have inflated house prices, which cost new home buyers and have wider impacts on the economy. Nevertheless, if the assumption is made that the only value of Delmore housing is a small increase in consumer surplus just for Delmore residents (Denne 2025), the value of that item is $6.95 million. In that case, the net benefit would be $331.8 million, and the BCR would be 1.8. That is, each $1 of cost would generate nearly $2 of benefit. Additional results are provided in Appendix E.

7.3 Results for New Zealand

Table 5 provides a summary of CBA results from the perspective of New Zealand. The national results are different from the Auckland results because economic activity moves between regions. Sectors that are growing can pull in resources from elsewhere, and sectors that are displaced can move elsewhere. The net benefit to New Zealand of the application over the period 2026 to 2050 is $1.21 billion, considering direct and indirect economic impacts. If consumption impacts are included, then the net benefit is $1.35 billion. The BCR for the former case is 4.2, and for the latter case is 3.7. That is, for every $1

of cost – infrastructure cost, opportunity cost, environmental cost – New Zealand receives around $4 of benefit.

Interestingly, the net benefit to New Zealand is smaller than that to Auckland, but the BCR is higher. The movement of economic activity across regions means that some benefit and some opportunity costs within the Auckland region end up as opposite impacts elsewhere in the country. The gross benefit is lower, but so are the opportunity costs. As a result, the ratio of benefits to costs is better when viewed from the New Zealand perspective.

Table 5 CBA results – New Zealand

For the Delmore application

	Direct and indirect impacts ($m)	Including consumption impacts[a] ($m)
Benefits		
Higher housing supply	903.8	903.8
Auckland rates	24.9	24.9
Road inside development	10.6	10.6
Road outside develoment	15.6	15.6
Construction impacts	631.8	892.2
Environmental benefits	0.0	0.0
Total benefits	**1,586.7**	**1,847.0**
Costs		
Resident charges	34.8	34.8
Road inside development	10.6	10.6
Road outside develoment	15.6	15.6
Opportunity cost, agriculture	1.2	1.5
Opportunity cost, wider economy	311.2	436.1
Environmental costs	0.0	0.0
Total costs	**373.4**	**498.5**
Net benefit	**1,213.3**	**1,348.5**
Benefit-cost ratio (not $m)	**4.2**	**3.7**

[a] Consumption impacts included only for construction, agriculture and wider economy impacts.

Source: NZIER

As with the Auckland analysis, the largest source of benefit is the value of a higher housing supply. If the assumption is made that the only value of Delmore housing is a small increase in consumer surplus just for Delmore residents (Denne 2025), that benefit has a value of only $6.95 million. In that case, the net benefit would be $316.5 million, and the BCR would be 1.8. That is, each $1 of cost would generate nearly $2 of benefit.

7.4 Other impacts and results

The main results of the analysis are presented here. Further analysis and sensitivity testing could be conducted and reported. However, they are unlikely to change the main implication of the analysis, that the application will have significant regional and national benefits.

As discussed above, more impacts have been identified than have been quantified and valued in the CBA. It is important to consider the relative magnitudes of impacts. The main benefits of the application are in the hundreds of millions of dollars, and the total gross benefit is over one billion dollars, approaching two billion dollars. To change the main implication of the CBA, there would need to be costs of the same magnitude.

8 References

Bade, David. 2025. *Dwellings and Households in Tāmaki Makaurau / Auckland: Results from the 2023 Census*. Auckland Council.

Barnard, Lucy Telfar, Nick Preval, Philippa Howden-Chapman, et al. 2011. *The Impact of Retrofitted Insulation and New Heaters on Health Services Utilisation and Costs, Pharmaceutical Costs and Mortality: Evaluation of Warm Up New Zealand: Heat Smart*. He Kāinga Oranga/Housing and Health Research Programme, University of Otago; Motu; and Covec.

Beef + Lamb New Zealand. 2025. 'Sheep and Beef Farm Survey Analysis'.

Conway, Paul. 2018. 'Can the Kiwi Fly? Achieving Productivity Lift-Off in New Zealand'. *International Productivity Monitor*, no. 34: 24.

Denne, Tim. 2025. 'Delmore Fast Track Approvals Act Application - Review of Economic Analyses'. Resource Economics, August 13.

Grant, Susie M., Simeon L. Hill, Philip N. Trathan, and Eugene J. Murphy. 2013. 'Ecosystem Services of the Southern Ocean: Trade-Offs in Decision-Making'. *Antarctic Science* 25 (5): 603–17. https://doi.org/10.1017/S0954102013000308.

Infometrics. 2025a. 'Quarterly Economic Monitor: Auckland'. September. https://quarterly.infometrics.co.nz/auckland/housing/house-sales.

Infometrics. 2025b. 'Regional Economic Profile: Auckland: House Values'. https://regions.infometrics.co.nz/auckland/income-and-housing/house-values.

Krieble, Todd, and Bill Kaye-Blake. 2024. *Pathways to Prosperity: Capturing More of the Value of Our Food and Fibre Sector Exports for New Zealand*. NZIER and The Helen Clark Foundation.

Kuschel et al. 2022. *Health and Air Pollution in New Zealand 2016 (HAPINZ 3.0): Findings and Implications*. Report prepared by G Kuschel, J Metcalfe, S Sridhar, P Davy, K Hastings, K Mason, T Denne, J Berentson-Shaw, S Bell, S Hales, J Atkinson and A Woodward for Ministry for the Environment, Ministry of Health, Te Manatū Waka Ministry of Transport and Waka Kotahi NZ Transport Agency, March 2022. https://environment.govt.nz/publications/health-and-air-pollution-in-new-zealand-2016-findings-and-implications/.

Ledoux, L., and R.K. Turner. 2002. 'Valuing Ocean and Coastal Resources: A Review of Practical Examples and Issues for Further Action'. *Ocean & Coastal Management* 45 (9–10): 583–616. https://doi.org/10.1016/S0964-5691(02)00088-1.

McKenzie & Co. 2025. 'Memo: Delmore - Cost of NOR 6 Road'. November 14.

Meade, Richard. 2025. 'Delmore Fast-Track: 25/06/2025 - Auckland Council Response: Annexure 3: Economic (Peer Review)'. June 25.

Metcalfe, Jayne, and Serge Peeters. 2025. *Vehicle Emissions Prediction Model: VEPM 7.1 Technical Report*. New Zealand Transport Agency Waka Kotahi prepared by Emission Impossible Ltd.

MRCagney. 2019. *The Costs and Benefits of Urban Development*.

New Zealand Government. 2021. 'The Clean Car Import Standard – Reducing Vehicle CO2 Emissions to 105 Grams per Kilometre by 2025'. https://www.beehive.govt.nz/sites/default/files/2021-01/Clean%20Car%20Import%20Standard%20Explainer_0.pdf.

New Zealand Infrastructure Commission. 2022a. *Economic Performance of New Zealand's Construction Industry*. New Zealand Infrastructure Commission. https://media.umbraco.io/te-waihanga-30-year-strategy/fsbjr2fh/economic-performance-of-new-zealands-construction-industry.pdf.

New Zealand Infrastructure Commission. 2022b. *The Decline of Housing Supply in New Zealand: Why It Happened and How to Reverse It*. Te Waihanga Research Insights series. New Zealand Infrastructure Commission.

New Zealand Productivity Commission. 2021. *New Zealand Firms: Reaching for the Frontier. Final Report*.

New Zealand Productivity Commission. 2023. *Productivity by the Numbers 2023*. Wellington. http://www.productivity.govt.nz/.

NZ Transport Agency Waka Kotahi. 2025. 'Monetised Benefits and Costs Manual'. https://www.nzta.govt.nz/resources/monetised-benefits-and-costs-manual.

Parker, Chris. 2021. 'AMM Modelling of Uncompetitive Urban Land Markets'. Paper presented at New Zealand Association of Economists 61st Annual Conference, Wellington. June 23.

Pierse, Neville, Maddie White, and Riggs, Lynn. 2019. *Healthy Homes Initiative Outcomes Evaluation Interim Report*. Interim report. https://www.health.govt.nz/system/files/2019-09/healthy-homes-initiative-outcomes-evaluation-interim-report-18sept2019.pdf.

Stewart, James. 2025a. 'Delmore Fast-Track: Auckland Council Response: Annexure 2: Economics'. June 25.

Stewart, James. 2025b. 'Fast-Track Approvals Act 2024 - Delmore Substantive Application: Technical Addendum'. July 18.

Stewart, James. 2025c. 'Memo: Review of Proposed Delmore Residential Development, Hibiscus Coast, Auckland Economic Assessment by Urban Economics - BUN60444768'. May 16.

Terra Studio. 2025. 'Delmore Site Plans'. December 12.

The Treasury. 2015. *Guide to Social Cost Benefit Analysis*. Wellington.

The Treasury. 2021. *CBAx Tool User Guidance: Guide for Departments and Agencies Using Treasury's CBAx Tool for Cost Benefit Analysis*. Wellington.

The Treasury. 2025. 'CBAx Spreadsheet Model'. October. https://www.treasury.govt.nz/publications/guide/cbax-spreadsheet-model.

Urban Economics. 2025. 'Proposed Delmore Residential Development, Hibiscus Coast, Auckland: Economic Assessment'. February 13.

Wallis, Ian, and David Lupton. 2013. *The Costs of Congestion Reappraised*. NZ Transport Agency Research Report No. 489. NZ Transport Agency.

Watercare. 2024. 'Be Waterwise'. https://www.ecomatters.org.nz/wp-content/uploads/2024/01/bewaterwise_domestic.pdf.

Watercare. 2025. 'Residential Water Services and Wastewater Charges and IGC'. https://promising-sparkle-d7f0c0cfc9.media.strapiapp.com/residential_other_charges_2025_2026_pdf_cf73059f20.pdf.

Appendix A Code of Conduct and Conflict of Interest Declaration

The author of this report is [redacted], who makes the following declaration:

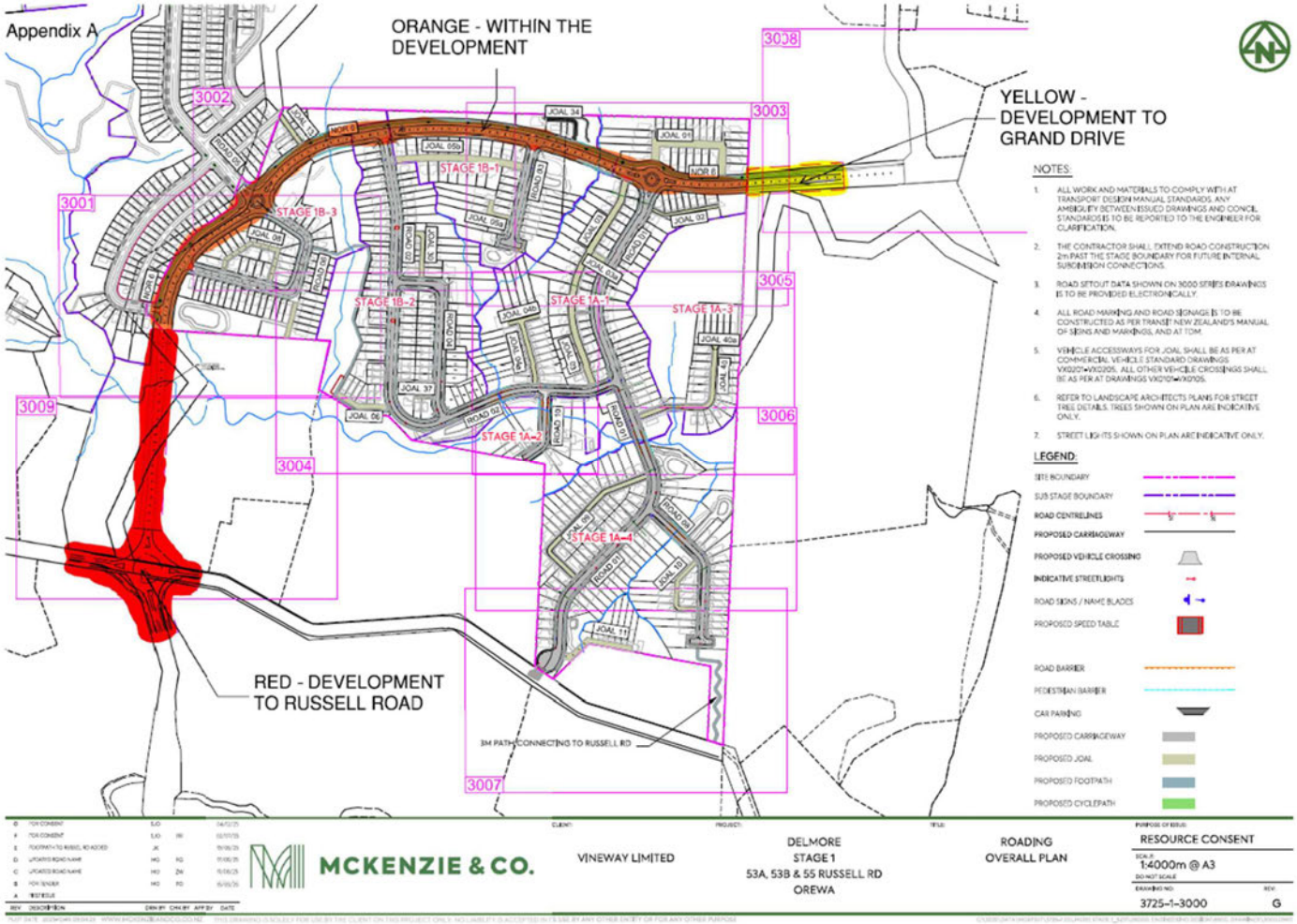
> *I have read the Environment Court's Code of Conduct for Expert Witnesses 2014, and I agree to comply with it. I confirm that the issues addressed in this brief of evidence are within my area of expertise, except where I state I am relying on what I have been told by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.*
>
> *I have no commercial relationship with the Applicant, save in my role as an expert in relation to this application.*

Appendix B Cost estimate of external road

The figure and table below contain information about cost estimates for sections of roading:

- NOR 6 road within the Delmore development, at a cost of $10.6 million
- The development to Russell Road, at a cost of $15.6 million
- An additional development to Grand Drive, which is not included in the CBA..

Figure 6 Plan for roading



Source: McKenzie & Co., pers. comm., [redacted], 17 December 2025.

Table 6 Desktop cost estimate for NOR 6 construction costs

NOR 6 Legal Road Width (m)	24		Within Development Only (Orange) Length (more or less)	860	AVJ to Development (Yellow) Length (more or less)	122	Development to Upper Orewa Road (Red) Length (more or less)	481	
Description	**Unit**	**Rate**	**Quantity**	**Total**	**Quantity**	**Total**	**Quantity**	**Total**	**Comment**
Earthworks (all inclusive)	m3	$ 25.00	51600	$ 1,290,000.00	7320	$ 183,000.00	22860	$ 571,500.00	Average cut fill depth taken across road alignment. All inclusive rate. Excludes bridge portion
Back to balk wall including box culvert 1	LS	$ 1,500,000.00	1	$ 1,500,000.00	0	$ -	0	$ -	Stream Crossing AVJ End
Back to balk wall including box culvert 2	LS	$ 1,500,000.00	1	$ 1,500,000.00	0	$ -	0	$ -	Stream Crossing Convent
Bridge Crossing	m	$ 100,000.00	0	$ -	0	$ -	100	$ 10,000,000.00	Large stream crossing towards Russell Road end likely a 100m long bridge
Wastewater (pipe plus MH)	m	$ 260.00	300	$ 78,000.00	0	$ -	100	$ 26,000.00	Based on original design
Stormwater (pipe plus MH)	m	$ 500.00	860	$ 430,000.00	122	$ 61,000.00	481	$ 240,500.00	Based on original design average Dia taken 375
Stormwater Treatment (per pond)	each	$ 200,000.00	3	$ 600,000.00	0	$ -	1	$ 200,000.00	
Water	m	$ 200.00	1720	$ 344,000.00	244	$ 48,800.00	962	$ 192,400.00	Based on original design assume 200 Dia
Power	m	$ 145.00	1720	$ 249,400.00	244	$ 35,380.00	962	$ 139,490.00	Civil work and streetlights assume bulk of power cost related to lots not this road
Chorus	m	$ 75.00	1720	$ 129,000.00	244	$ 18,300.00	962	$ 72,150.00	Civil work
Subgrade Trim	m2	$ 4.00	9804	$ 39,216.00	1390.8	$ 5,563.20	5483.4	$ 21,933.60	Based off RC design
Subgrade improvement	m2	$ 10.00	9804	$ 98,040.00	1390.8	$ 13,908.00	5483.4	$ 54,834.00	Based off RC design
Subbase	m3	$ 140.00	4215.72	$ 590,200.80	598.044	$ 83,726.16	2357.862	$ 330,100.68	Based off RC design
Basecourse	m3	$ 190.00	1854.16	$ 352,290.40	263.032	$ 49,976.08	1037.036	$ 197,036.84	Based off RC design
Asphalt	m2	$ 49.00	8428	$ 412,972.00	1195.6	$ 58,584.40	4713.8	$ 230,976.20	Based off RC design
Kerb/subsoil	m	$ 130.00	3440	$ 447,200.00	488	$ 63,440.00	1924	$ 250,120.00	Kerb x 4 (cycleway x2, LHS, RHS,)
Footpath including Cycle Way	m2	$ 99.00	6880	$ 681,120.00	976	$ 96,624.00	3848	$ 380,952.00	Width = (4x2)
Streetlights	each	$ 4,800.00	22	$ 105,600.00	3	$ 14,400.00	12	$ 57,600.00	Assume 1x light every 40m
Roundabout 1 Extra Over	LS	$ 300,000.00	1	$ 300,000.00	0	$ -	0	$ -	Rational is based on a smaller development that had 4x roundabouts which was 250k per roundabout. Structural high fatigue pavements islands etc.
Roundabout 2 Extra Over	LS	$ 350,000.00	1	$ 350,000.00	0	$ -	0	$ -	
Roundabout 3 Extra Over	LS	$ 1,000,000.00	0	$ -	0	$ -	1	$ 1,000,000.00	Upper Orewa Roundabout includes relocating power poles, does not include land acquisition price
Line Marking/Signage	LS	$ 20,000.00	1	$ 20,000.00	1	$ 7,500.00	2	$ 12,500.00	
Traffic Control	LS	$ 125,000.00	0	$ -	0	$ -	1	$ 125,000.00	Upper Orewa Road End
Landscaping	m	$ 100.00	860	$ 86,000.00	122	$ 12,200.00	481	$ 48,100.00	
Total				$ 9,603,039.20		$ 752,401.84		$ 14,151,193.32	
Plus 10% Prelim and General			10%	$ 960,303.92	10%	$ 75,240.18	10%	$ 1,415,119.33	10% P&G
Grand Total				$ 10,563,343.12		$ 827,642.02		$ 15,566,312.65	
Per Lineal Metre Rate of Road				$ 12,282.96		$ 6,783.95		$ 32,362.40	

Source: McKenzie & Co., pers. comm., [redacted], 17 December 2025.

Appendix C Details of the CBA (not discounted)

Multipliers

Value-add multipliers

National			
Industry	**Direct impact**	**Type I**	**Type II**
Sheep, beef cattle, and grain farming	0.43	1.96	2.42
Residential building construction	0.22	3.63	5.12
Heavy and civil engineering construction	0.33	2.44	3.65
Average for economy	0.54	1.79	2.50

Auckland			
Industry	**Direct impact**	**Type I**	**Type II**
Sheep, beef cattle, and grain farming	0.43	1.66	2.11
Residential building construction	0.22	3.90	5.75
Heavy and civil engineering construction	0.33	2.62	4.11
Average for economy	0.53	1.97	2.95

Employment multipliers

National			
Industry	**Direct impact**	**Type I**	**Type II**
Sheep, beef cattle, and grain farming	1.88	2.29	2.90
Residential building construction	1.23	4.03	5.56
Heavy and civil engineering construction	2.07	2.40	3.51
Average for economy	5.33	1.69	2.33

Auckland			
Industry	**Direct impact**	**Type I**	**Type II**
Sheep, beef cattle, and grain farming	1.88	1.86	2.44
Residential building construction	1.23	4.30	6.19
Heavy and civil engineering construction	2.07	2.60	3.97
Average for economy	5.26	1.82	2.64

End

More housing

$985,000	Average house price
1,203	Number of houses

Method A - calculates consumer surplus triangle and producer surplus rectangle from Denne's diagram

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Houses constructed	0	120	120	120	120	120	120	120	120	120	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
House sales per year	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315	24,315
% change in Quantity	0.00%	0.49%	0.49%	0.49%	0.49%	0.49%	0.49%	0.49%	0.49%	0.49%	0.49%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Price elasticity	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35
% change in Price	0.0%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	-1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2025 average house value	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000	1,218,000
$ change in Price	0	-17,218	-17,218	-17,218	-17,218	-17,218	-17,218	-17,218	-17,218	-17,218	-17,218	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Consumer surplus (delQ*delP/2)	0	-1,035,634	-1,035,634	-1,035,634	-1,035,634	-1,035,634	-1,035,634	-1,035,634	-1,035,634	-1,035,634	-1,035,634	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Change in producer surplus (Q0*(P0-P1))	0	-418,644,000	-418,644,000	-418,644,000	-418,644,000	-418,644,000	-418,644,000	-418,644,000	-418,644,000	-418,644,000	-418,644,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Method B - every Delmore house is $100k more affordable than average

The $100,000 is an assumption; the Urban Economics report calculated a larger value.

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Houses constructed	0	120	120	120	120	120	120	120	120	120	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Savings per house	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Savings for Delmore residents	0	12,030,000	12,030,000	12,030,000	12,030,000	12,030,000	12,030,000	12,030,000	12,030,000	12,030,000	12,030,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Method C - because of the price elasticity for houses (-0.35), we can use the greater quantity to calculate the lower price and apply it to purchased for 25 years

Year index -->	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Annual increase	12,967	12,967	13,242	13,522	13,808	14,102	14,400	14,706	15,017	15,335	15,660	15,992	16,331	16,677	17,031	17,393	17,763	18,137	18,521	18,913	19,314	19,723	20,141	20,569	21,004	21,449	21,904	22,368
Auckland dwellings	611,895	624,862	638,104	651,626	665,435	679,533	693,937	708,643	723,660	738,996	754,656	770,648	786,980	803,657	820,688	838,079	855,833	873,976	892,497	911,410	930,724	950,447	970,589	991,158	1,012,162	1,033,611	1,055,515	1,077,883
Delmore houses	0	0	0	120	120	120	120	120	120	120	120	120	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auckland dwelling with Delmore	611 895	624 862	638 104	651 746	665 676	679 896	694 416	709 244	724 382	739 838	755 616	771 731	788 183	804 86	821 89	839 28	857 04	875 179	893 700	912 613	931 927	951 65	971 79	992 361	1 013 365	1 034 814	1 056 718	1 079 08
% change in Quantity	0.000%	0.000%	0.000%	0.018%	0.036%	0.053%	0.069%	0.085%	0.100%	0.114%	0.128%	0.140%	0.153%	0.150%	0.147%	0.144%	0.141%	0.138%	0.135%	0.132%	0.129%	0.127%	0.124%	0.121%	0.119%	0.116%	0.114%	0.112%
Price elasticity	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35
% change in Price	0.000%	0.000%	0.000%	-0.053%	-0.103%	-0.152%	-0.198%	-0.243%	-0.285%	-0.326%	-0.364%	-0.401%	-0.437%	-0.428%	-0.419%	-0.410%	-0.402%	-0.393%	-0.383%	-0.377%	-0.369%	-0.362%	-0.354%	-0.347%	-0.340%	-0.333%	-0.326%	-0.319%
2025 average house value	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000	1 218 000
$ change in Price	0	0	0	-642	-1 258	-1 848	-2 413	-2 954	-3 471	-3 966	-4 438	-4 889	-5 320	-5 209	-5 10	-4 99	-4 89	-4 790	-4 691	-4 593	-4 498	-4 404	-4 313	-4 224	-4 136	-4 050	-3 966	-3 884
Annual house sales	24 315	24 315	24 315	24 315	24 315	24 315	24 315	24 315	24 315	24 315	24 315	24 315	24 315	24 315	24 315	24 315	24 315	24 313	24 313	24 313	24 313	24 313	24 313	24 313	24 313	24 313	24 315	24 315
$ savings on housing	0	0	0	15,621,424	30,594,503	44,939,418	58,675,794	71,822,708	84,398,710	96,421,834	107,909,611	118,879,08	129,346,809	126,662,63	124,034,157	121,460,227	118,939,71	116,471,500	114,054,509	111,687,679	109,369,956	107,100,33	104,877,81	102,701,41	100,570,173	98,483,163	96,439,462	94,438,17

End

Auckland rates

$985,000	Average house price
1,203	Number of houses

2025/2026 relevant rates

	Rate value per SUIP (incl GST)	Unit	Annual rate per SUIP @ average CV	Annual revenue for all SUIPs
UAGC	$603.00	Fixed	$603.00	$725,409.00
General rate	0.0020468	per $ CV	$2,016.10	$2,425,365.89
Targeted rates				
Climate action transport (CATTR)	0.00004979	per $ CV	$49.04	$58,998.91
Water quality	0.00000837	per $ CV	$8.24	$9,918.07
Natural environment	0.00003173	per $ CV	$31.25	$37,598.62
Rodney transport fee	$150	Fixed	$150.00	$180,450.00
Waste management services				
Base charge	$46.69	Fixed	$46.69	$56,168.07
Recycling	$118.96	Fixed	$118.96	$143,108.88
Food Scraps	$79.25	Fixed	$79.25	$95,337.75
a) Refuse - standard (120L/140L)	$194.41	Fixed	$194.41	$233,875.23
b) Refuse - small (80L)	*$161.56*	*Fixed*	*$161.56*	*$194,356.68*
c) Refuse - large (240L)	*$322.68*	*Fixed*	*$322.68*	*$388,184.04*
Total with standard refuse (not 80L or 240L)			**$3,296.95**	**$3,966,230.43**

Auckland fraction of rates

Item	Annual value per SUIP	SUIPS	Annual revenue for all SUIPs
Rates received	$3,296.95	1,203	$3,966,230.43
Less GST to central government	$430.04	1,203	$517,334.40
Rates to Auckland City Council	$2,866.91	1,203	$3,448,896.03

Further information

Auckland Council rates equation

Rates = UAGC + (General Rate in ¢/NZ$CV × Property CV) + Targeted Rates

Where:

UAGC = fixed charge (NZ$)

Value based general rate in ¢/NZ$ = rate set for the class of the property (residential, business, rural)

The council's general rate is made up of the Uniform Annual General Charge (UAGC) and the valuebased general rate.
Revenue from the general rate is used to fund the council activities that are deemed to generally and equally benefit Auckland and that part of activities that are not funded by other sources.

Property CV = capital value (NZ$) for the property (or rating unit) used by the Council
Targeted rates = sum of specific service-based changes for that property or year
Unless otherwise stated, the targeted rates described below will be used as sources of funding for each year until 2033/2034.
SUIP = 'separately used or inhabited parts' of a property

Sources:

https://ourauckland.aucklandcouncil.govt.nz/news/2024/06/your-rates-faqs/
https://ourauckland.aucklandcouncil.govt.nz/media/j5dhqk5f/auckland-council-rates-webinar-q-a.pdf
https://www.aucklandcouncil.govt.nz/externalcontentdelivery/consultations/budgets/annual-plan-2025-2026/annual-plan-2025-2026-supporting-information.pdf

End

AC rates at Delmore

1,203	Houses in Delmore
10	Years for construction

Benefits

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Houses	0	120	241	361	481	602	722	842	962	1,083	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203
Per SUIP, rates total	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297	$3,297
Per SUIP, rates for Auckland	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867	$2,867
Total rates	$0	$396,623	$793,246	$1,189,869	$1,586,492	$1,983,115	$2,379,738	$2,776,361	$3,172,984	$3,569,607	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230	$3,966,230
Total rates for Auckland	$0	$344,890	$689,779	$1,034,669	$1,379,558	$1,724,448	$2,069,338	$2,414,227	$2,759,117	$3,104,006	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896	$3,448,896

End

AKL Construction impacts

Benefits

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**
Houses constructed	0	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average price	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000
Value of output	0	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value-added, Direct impact	0	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value-added, Type I	0	101,210,689	101,210,689	101,210,689	101,210,689	101,210,689	101,210,689	101,210,689	101,210,689	101,210,689	101,210,689	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value-added, Type II	0	149,198,168	149,198,168	149,198,168	149,198,168	149,198,168	149,198,168	149,198,168	149,198,168	149,198,168	149,198,168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Direct impact	0	146	146	146	146	146	146	146	146	146	146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Type I	0	628	628	628	628	628	628	628	628	628	628	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Type II	0	903	903	903	903	903	903	903	903	903	903	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Opportunity costs (average economic performance)

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**
Value-added, Direct impact	0	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value-added, Type I	0	51,173,719	51,173,719	51,173,719	51,173,719	51,173,719	51,173,719	51,173,719	51,173,719	51,173,719	51,173,719	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value-added, Type II	0	76,527,451	76,527,451	76,527,451	76,527,451	76,527,451	76,527,451	76,527,451	76,527,451	76,527,451	76,527,451	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Direct impact	0	146	146	146	146	146	146	146	146	146	146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Type I	0	266	266	266	266	266	266	266	266	266	266	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Type II	0	386	386	386	386	386	386	386	386	386	386	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

End

NZL Construction impacts

Benefits

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**
Houses constructed	0	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average price	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000	985,000
Value of output	0	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	118,495,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value-added, Direct impact	0	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value-added, Type I	0	94,155,826	94,155,826	94,155,826	94,155,826	94,155,826	94,155,826	94,155,826	94,155,826	94,155,826	94,155,826	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value-added, Type II	0	132,957,399	132,957,399	132,957,399	132,957,399	132,957,399	132,957,399	132,957,399	132,957,399	132,957,399	132,957,399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Direct impact	0	146	146	146	146	146	146	146	146	146	146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Type I	0	588	588	588	588	588	588	588	588	588	588	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Type II	0	812	812	812	812	812	812	812	812	812	812	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Opportunity costs

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**
Value-added, Direct impact	0	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	25,947,920	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value-added, Type I	0	46,374,999	46,374,999	46,374,999	46,374,999	46,374,999	46,374,999	46,374,999	46,374,999	46,374,999	46,374,999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Value-added, Type II	0	64,987,243	64,987,243	64,987,243	64,987,243	64,987,243	64,987,243	64,987,243	64,987,243	64,987,243	64,987,243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Direct impact	0	146	146	146	146	146	146	146	146	146	146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Type I	0	247	247	247	247	247	247	247	247	247	247	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Employment, Type II	0	575	575	575	575	575	575	575	575	575	575	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

End

Development contributions

$985,000	Average house price
1,203	Number of houses

DC estimates per HUE	
Item	**Value**
Auckland-wide	
Reserve acquisition	$432
Reserve development	$25
Transport	$8,814
Community infrastructure	$633
Sub-regional	
Northern Greenfield Reserve Acquisition	$1,410
Stormwater	n/a
North Transport	$2,272
Community infrastructure	n/a
Local	
Upper Orewa/Dairy Flat Reserve Acquisition	$2,165
Upper Orewa/Dairy Flat Reserve Development	$227
Dairy Flat/Wainui/Silverdale Stormwater	n/a
Dairy Flat/Wainui/Silverdale Transport	$8,088
Silverdale/Dairy Flat/Wainui Community Infrastructure	n/a
Total Development Contributions	**$24,066**

Source: [redacted], pers. comm., 30/11/2025.

DCs over time											
Year index -->	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Year -->	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
Houses constructed	0	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3	120.3
DC per HUE	24,066	24,066	24,066	24,066	24,066	24,066	24,066	24,066	24,066	24,066	24,066
Total DCs	0	2,895,140	2,895,140	2,895,140	2,895,140	2,895,140	2,895,140	2,895,140	2,895,140	2,895,140	2,895,140

End

Wetlands constructed

-$71,503	Cost of replacing wetland ecosystem services with physical infrastructure - per hectare (CBAx)
2,400	New wetlands to be created, Stage 1
1,331	New wetlands to be created, Stage 2

DC estimates per HUE

Item	Value
Value of wetlands, per hectare	$71,503
Value of wetlands, per square metre	$7.15
Total wetlands constructed, square metres	3,731
Value of wetlands to be constructed	$26,678

End

Resident charges

1,203	Houses in Delmore
10	Years for construction

Annual charges

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Houses	0	120	241	361	481	602	722	842	962	1,083	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203	1,203
Resident charges per unit	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000
Total residential charges	$0	$481,200	$962,400	$1,443,600	$1,924,800	$2,406,000	$2,887,200	$3,368,400	$3,849,600	$4,330,800	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000	$4,812,000

End

Water and wastewater costs

325,000	Wastewater opex per year
125,000	Water opex per year

OPEX figures

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Wastewater opex	$0	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000
Water opex	$0	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000

End

Lost ag production

Lost production																										
Year index -->	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**
Year -->	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**
Effective farm area (hectares)	0	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
Production per hectare	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35	2,122.35
Lost production	0	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014	139,014

Auckland impacts																										
Year -->	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**
Value-added, Direct impact	0	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119
Value-added, Type I	0	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204	98,204
Value-added, Type II	0	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683	124,683
Employment, Direct impact	0.00	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Employment, Type I	0.00	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Employment, Type II	0.00	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76

New Zealand impacts																										
Year -->	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**
Value-added, Direct impact	0	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119	59,119
Value-added, Type I	0	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700	115,700
Value-added, Type II	0	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148	143,148
Employment, Direct impact	0.00	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Employment, Type I	0.00	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Employment, Type II	0.00	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76

End

Wetlands removed

-$71,503	Cost of replacing wetland ecosystem services with physical infrastructure - per hectare (CBAx)
748	Wetlands to be removed, Stage 1
338	Wetlands to be removed, Stage 2

DC estimates per HUE

Item	Value
Value of wetlands, per hectare	$71,503
Value of wetlands, per square metre	$7.15
Total wetlands to be removed, square metres	1,086
Value of wetlands to be removed	$7,765

End

Appendix D CBA discounting calculations and summary

Annual CBA

High discount rate	Discount rate choice

Benefits

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Discount factor -->	1.00	1.08	1.17	1.26	1.36	1.47	1.59	1.71	1.85	2.00	2.16	2.33	2.52	2.72	2.94	3.17	3.43	3.70	4.00	4.32	4.66	5.03	5.44	5.87	6.34	6.85
Benefit																										
Development contributions	*0*	*2,680,685*	*2,482,116*	*2,298,255*	*2,128,014*	*1,970,384*	*1,824,429*	*1,689,286*	*1,564,154*	*1,448,291*	*1,341,010*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
More housing, method A, CSO	*0*	*958,920*	*887,889*	*822,120*	*761,222*	*704,835*	*652,625*	*604,282*	*559,521*	*518,075*	*479,699*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
More housing, method A, PS1	*0*	*387,633,333*	*358,919,753*	*332,333,105*	*307,715,838*	*284,922,072*	*263,816,733*	*244,274,753*	*226,180,327*	*209,426,229*	*193,913,175*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
More housing, method B	*0*	*11,138,889*	*10,313,786*	*9,549,802*	*8,842,409*	*8,187,416*	*7,580,941*	*7,019,389*	*6,499,435*	*6,017,995*	*5,572,218*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
More housing, method C	**0**	**14,464,281**	**26,229,855**	**35,674,359**	**43,128,460**	**48,881,328**	**53,185,504**	**56,261,214**	**58,300,205**	**59,469,137**	**59,912,600**	**54,323,432**	**49,255,670**	**44,660,673**	**40,494,338**	**36,716,674**	**33,291,424**	**30,185,711**	**27,369,725**	**24,816,440**	**22,501,347**	**20,402,226**	**18,498,925**	**16,773,188**	**15,208,435**	**13,789,664**
Auckland rates	0	319,342	591,374	821,353	1,014,017	1,173,630	1,304,034	1,408,678	1,490,665	1,552,776	1,597,306	1,479,172	1,369,604	1,268,152	1,174,215	1,087,236	1,006,700	932,130	863,083	799,151	739,954	685,143	634,392	587,400	543,885	503,605
Watercare charges	0	154,856	286,770	398,292	491,719	569,119	632,354	683,099	722,856	752,975	774,665	717,283	664,151	614,954	569,402	527,224	488,170	452,010	418,528	387,525	358,820	332,241	307,630	284,843	263,743	244,207
Road section inside development	10,563,343																									
Road section outside development	15,566,313																									
Social benefits																										
Wetlands	0	0	0	0	0	0	0	0	0	0	12,357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth of construction, AKL Type I	0	93,713,601	86,771,853	80,344,308	74,392,878	68,882,294	63,779,902	59,055,465	54,680,986	50,630,543	46,880,132															
Growth of construction, AKL Type II	0	138,146,452	127,913,381	118,438,316	109,665,107	101,541,766	94,020,154	87,055,698	80,607,128	74,636,229	69,107,620															
Growth of construction, NZL Type I	0	87,181,320	80,723,444	74,743,930	69,207,343	64,080,873	59,334,141	54,939,020	50,869,463	47,101,355	43,612,363															
Growth of construction, NZL Type II	0	123,108,703	113,989,540	105,545,870	97,727,657	90,488,572	83,785,715	77,579,365	71,832,746	66,511,802	61,585,001															
Total, AKL Type I	26,129,656	108,652,080	113,879,852	117,238,313	119,027,073	119,506,372	118,901,794	117,408,456	115,194,712	112,405,431	109,177,260	56,519,887	51,289,425	46,543,780	42,237,955	38,331,134	34,786,294	31,569,850	28,651,336	26,003,116	23,600,121	21,419,609	19,440,951	17,645,430	16,016,071	14,537,471
Total, AKL Type II	26,129,656	153,084,931	155,021,381	155,332,320	154,299,302	152,165,843	149,142,045	145,408,689	141,120,853	136,411,118	131,404,748	56,519,887	51,289,425	46,543,780	42,237,955	38,331,134	34,786,294	31,569,850	28,651,336	26,003,116	23,600,121	21,419,609	19,440,951	17,645,430	16,016,071	14,537,471
Total, NZL Type I	26,129,656	102,119,799	107,831,444	111,637,935	113,841,538	114,704,950	114,456,033	113,292,011	111,383,189	108,876,243	105,909,493	56,519,887	51,289,425	46,543,780	42,237,955	38,331,134	34,786,294	31,569,850	28,651,336	26,003,116	23,600,121	21,419,609	19,440,951	17,645,430	16,016,071	14,537,471
Total, NZL Type II	26,129,656	138,047,182	141,097,538	142,439,875	142,361,852	141,112,649	138,907,606	135,932,357	132,346,471	128,286,690	123,882,129	56,519,887	51,289,425	46,543,780	42,237,955	38,331,134	34,786,294	31,569,850	28,651,336	26,003,116	23,600,121	21,419,609	19,440,951	17,645,430	16,016,071	14,537,471

Italics entries not used.
Bold 'More housing' entry used.

Costs

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Discount factor -->	1.00	1.08	1.17	1.26	1.36	1.47	1.59	1.71	1.85	2.00	2.16	2.33	2.52	2.72	2.94	3.17	3.43	3.70	4.00	4.32	4.66	5.03	5.44	5.87	6.34	6.85
Cost																										
Social costs																										
Environmental costs	7,765	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Resident charges	0	445,556	825,103	1,145,976	1,414,785	1,637,483	1,819,426	1,965,429	2,079,819	2,166,478	2,228,887	2,063,784	1,910,911	1,769,362	1,638,299	1,516,943	1,404,577	1,300,534	1,204,198	1,114,998	1,032,406	955,931	885,122	819,557	758,849	702,638
Road section inside development	10 563 343																									
Road section outside development	15,566,313																									
Opportunity cost, agriculture AKL Type I	0	90,929	84,194	77,957	72,183	66,836	61,885	57,301	53,056	49,126	45,487	42,118	38,998	36,109	33,434	30,958	28,665	26,541	24,575	22,755	21,065	19,509	18,064	16,728	15,487	14,335
Opportunity cost, agriculture AKL Type II	0	115,447	106,896	98,977	91,646	84,857	78,571	72,751	67,362	62,373	57,752	53,474	49,513	45,846	42,450	39,305	36,394	33,698	31,202	28,891	26,751	24,769	22,934	21,235	19,662	18,206
Opportunity cost, agriculture NZL Type I	0	107,129	99,194	91,846	85,043	78,743	72,910	67,510	62,509	57,879	53,591	49,622	45,946	42,542	39,391	36,473	33,772	31,270	28,954	26,809	24,823	22,984	21,282	19,705	18,246	16,894
Opportunity cost agriculture NZL Type II	0	132 545	122 727	113 636	105 218	97 424	90 208	83 526	77 339	71 610	66 300	61 394	56 846	52 635	48 736	45 126	41 784	38 689	35 823	33 165	30 712	28 437	26 331	24 380	22 574	20 907
Opportunity cost, construction AKL Type I	0	47,383,073	43,873,216	40,623,348	37,614,211	34,827,973	32,248,123	29,859,374	27,647,568	25,599,600	23,703,333	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Opportunity cost, construction AKL Type II	0	70,858,791	65,609,955	60,749,958	56,249,961	52,083,298	48,225,275	44,653,033	41,345,401	38,282,779	35,447,017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Opportunity cost, construction NZL Type I	0	42,939,813	39,759,087	36,813,969	34,087,008	31,562,045	29,224,116	27,059,366	25,054,969	23,199,045	21,480,597	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Opportunity cost, construction NZL Type II	0	60,173,374	55,716,087	51,588,969	47,767,564	44,229,226	40,952,987	37,919,432	35,110,585	32,509,801	30,101,668	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total AKL Type I	26 137 421	47 919 358	44 782 512	41 847 281	39 101 179	36 532 292	34 129 434	31 882 103	29 780 443	27 815 205	25 977 708	2 105 902	1 949 909	1 805 472	1 671 733	1 547 901	1 433 242	1 327 076	1 228 774	1 137 753	1 053 475	975 440	903 185	836 282	774 336	716 971
Total, AKL Type II	26,137,421	71,419,754	66,541,953	61,994,912	57,756,393	53,805,638	50,123,273	46,691,213	43,492,582	40,511,629	37,733,657	2,117,259	1,960,425	1,815,208	1,680,748	1,556,248	1,440,971	1,334,232	1,235,400	1,143,889	1,059,156	980,700	908,056	840,795	778,512	720,844
Total, NZL Type I	26,137,421	43,492,498	40,683,383	38,051,791	35,586,836	33,278,271	31,116,452	29,092,305	27,197,297	25,423,402	23,763,076	2,113,406	1,956,857	1,811,905	1,677,690	1,553,416	1,438,349	1,331,804	1,233,152	1,141,807	1,057,225	978,916	906,404	839,263	777,095	719,532
Total, NZL Type II	26,137,421	60,751,474	56,663,916	52,848,381	49,287,568	45,964,133	42,862,620	39,968,387	37,267,743	34,747,889	32,396,860	2,125,178	1,967,758	1,821,998	1,687,035	1,562,069	1,446,361	1,339,223	1,240,021	1,148,168	1,063,116	984,369	911,453	843,938	781,424	723,540

For information purposes

Year index -->	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Year -->	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Discount factor -->	1.00	1.08	1.17	1.26	1.36	1.47	1.59	1.71	1.85	2.00	2.16	2.33	2.52	2.72	2.94	3.17	3.43	3.70	4.00	4.32	4.66	5.03	5.44	5.87	6.34	6.85
Offset item																										
Development contribution	0	2 680 685	2 482 116	2 298 255	2 128 014	1 970 384	1 824 429	1 689 286	1 564 154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wastewater opex	0	300 926	278 635	257 995	238 885	221 190	204 805	189 634	175 587	162 581	150 538	139 387	129 062	119 502	110 650	102 454	94 864	87 837	81 331	75 306	69 728	64 563	59 781	55 353	51 252	47 456
Water opex	0	115 741	107 167	99 229	91 879	85 073	78 771	72 936	67 534	62 531	57 899	53 610	49 639	45 962	42 558	39 405	36 486	33 784	31 281	28 964	26 815	24 832	22 993	21 285	19 712	18 257

End

CBA summary

Final table -- Auckland

		Direct and indirect impacts ($m)	Including consumption impacts* ($m)
Benefits			
	Higher housing supply	903.8	903.8
	Auckland rates	24.9	24.9
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Construction impacts	679.1	1,001.1
	Environmental benefits	0.0	0.0
	Total benefits	**1,634.0**	**1,956.0**
Costs			
	Resident charges	35	35
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Opportunity cost, agriculture	1.0	1.3
	Opportunity cost, wider economy	343.4	513.5
	Environmental costs	0.0	0.0
	Total costs	**405.4**	**575.8**
Benefit-cost ratio		4.0	3.4

* Only for construction and agriculture impacts

Final table -- New Zealand

		Direct and indirect impacts ($m)	Including consumption impacts* ($m)
Benefits			
	Higher housing supply	903.8	903.8
	Auckland rates	24.9	24.9
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Construction impacts	631.8	892.2
	Environmental benefits	0.0	0.0
	Total benefits	**1,586.7**	**1,847.0**
Costs			
	Resident charges	34.8	34.8
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Opportunity cost, agriculture	1.2	1.5
	Opportunity cost, wider economy	311.2	436.1
	Environmental costs	0.0	0.0
	Total costs	**373.4**	**498.5**
Net benefit		1,213.3	1,348.5
Benefit-cost ratio		4.2	3.7

* Only for construction and agriculture impacts

End

Appendix E Sensitivity analysis of CBA summary

Table 7 CBA results: lowest housing value, higher discount rate

CBA summary

A1. Consumer surplus CS0 Method for benefit of more housing

Final table -- Auckland

		Direct and indirect impacts ($m)	Including consumption impacts* ($m)
Benefits			
	Higher housing supply	6.9	6.9
	Auckland rates	24.9	24.9
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Construction impacts	679.1	1,001.1
	Environmental benefits	0.0	0.0
	Total benefits	**737.2**	**1,059.2**
Costs			
	Resident charges	34.8	34.8
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Opportunity cost, agriculture	1.0	1.3
	Opportunity cost, wider economy	343.4	513.5
	Environmental costs	0.0	0.0
	Total costs	**405.4**	**575.8**
Net benefit		331.8	483.4
Benefit-cost ratio		1.8	1.8

* Only for construction and agriculture impacts

Final table -- New Zealand

		Direct and indirect impacts ($m)	Including consumption impacts* ($m)
Benefits			
	Higher housing supply	6.9	6.9
	Auckland rates	24.9	24.9
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Construction impacts	631.8	892.2
	Environmental benefits	0.0	0.0
	Total benefits	**689.8**	**950.2**
Costs			
	Resident charges	34.8	34.8
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Opportunity cost, agriculture	1.2	1.5
	Opportunity cost, wider economy	311.2	436.1
	Environmental costs	0.0	0.0
	Total costs	**373.4**	**498.5**
Net benefit		316.5	451.7
Benefit-cost ratio		1.8	1.9

* Only for construction and agriculture impacts

Source: NZIER

Table 8 CBA results: highest housing value, higher discount rate

CBA summary

A2. Producer surplus PS1	Method for benefit of more housing

Final table -- Auckland

		Direct and indirect impacts ($m)	Including consumption impacts* ($m)
Benefits			
	Higher housing supply	2,809.1	2,809.1
	Auckland rates	24.9	24.9
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Construction impacts	679.1	1,001.1
	Environmental benefits	0.0	0.0
	Total benefits	**3,539.4**	**3,861.4**
Costs			
	Resident charges	34.8	34.8
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Opportunity cost, agriculture	1.0	1.3
	Opportunity cost, wider economy	343.4	513.5
	Environmental costs	0.0	0.0
	Total costs	**405.4**	**575.8**
Net benefit		3,134.0	3,285.6
Benefit-cost ratio		8.7	6.7

* Only for construction and agriculture impacts

Final table -- New Zealand

		Direct and indirect impacts ($m)	Including consumption impacts* ($m)
Benefits			
	Higher housing supply	2,809.1	2,809.1
	Auckland rates	24.9	24.9
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Construction impacts	631.8	892.2
	Environmental benefits	0.0	0.0
	Total benefits	**3,492.0**	**3,752.4**
Costs			
	Resident charges	34.8	34.8
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Opportunity cost, agriculture	1.2	1.5
	Opportunity cost, wider economy	311.2	436.1
	Environmental costs	0.0	0.0
	Total costs	**373.4**	**498.5**
Net benefit		3,118.7	3,253.8
Benefit-cost ratio		9.4	7.5

* Only for construction and agriculture impacts

Source: NZIER

Table 9 CBA results: lowest housing value, lower discount rate

CBA summary

A1. Consumer surplus CS0 Method for benefit of more housing

Final table -- Auckland

		Direct and indirect impacts ($m)	Including consumption impacts* ($m)
Benefits			
	Higher housing supply	9.3	9.3
	Auckland rates	52.9	52.9
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Construction impacts	909.1	1,340.2
	Environmental benefits	0.0	0.0
	Total benefits	**997.5**	**1,428.5**
Costs			
	Resident charges	73.8	73.8
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Opportunity cost, agriculture	1.9	2.4
	Opportunity cost, wider economy	459.7	687.4
	Environmental costs	0.0	0.0
	Total costs	**561.5**	**789.8**
Net benefit		436.0	638.8
Benefit-cost ratio		1.8	1.8

* Only for construction and agriculture impacts

Final table -- New Zealand

		Direct and indirect impacts ($m)	Including consumption impacts* ($m)
Benefits			
	Higher housing supply	9.3	9.3
	Auckland rates	52.9	52.9
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Construction impacts	845.8	1,194.3
	Environmental benefits	0.0	0.0
	Total benefits	**934.1**	**1,282.6**
Costs			
	Resident charges	73.8	73.8
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Opportunity cost, agriculture	2.3	2.8
	Opportunity cost, wider economy	416.6	583.8
	Environmental costs	0.0	0.0
	Total costs	**518.8**	**686.5**
Net benefit		415.4	596.2
Benefit-cost ratio		1.8	1.9

* Only for construction and agriculture impacts

Source: NZIER

Table 10 CBA results: highest housing value, lower discount rate

CBA summary

A2. Producer surplus PS1 | Method for benefit of more housing

Final table -- Auckland

		Direct and indirect impacts ($m)	Including consumption impacts* ($m)
Benefits			
	Higher housing supply	3,760.5	3,760.5
	Auckland rates	52.9	52.9
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Construction impacts	909.1	1,340.2
	Environmental benefits	0.0	0.0
	Total benefits	**4,748.7**	**5,179.7**
Costs			
	Resident charges	73.8	73.8
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Opportunity cost, agriculture	1.9	2.4
	Opportunity cost, wider economy	459.7	687.4
	Environmental costs	0.0	0.0
	Total costs	**561.5**	**789.8**
Net benefit		4,187.2	4,390.0
Benefit-cost ratio		8.5	6.6

* Only for construction and agriculture impacts

Final table -- New Zealand

		Direct and indirect impacts ($m)	Including consumption impacts* ($m)
Benefits			
	Higher housing supply	3,760.5	3,760.5
	Auckland rates	52.9	52.9
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Construction impacts	845.8	1,194.3
	Environmental benefits	0.0	0.0
	Total benefits	**4,685.3**	**5,033.8**
Costs			
	Resident charges	73.8	73.8
	Road inside development	10.6	10.6
	Road outside develoment	15.6	15.6
	Opportunity cost, agriculture	2.3	2.8
	Opportunity cost, wider economy	416.6	583.8
	Environmental costs	0.0	0.0
	Total costs	**518.8**	**686.5**
Net benefit		4,166.6	4,347.4
Benefit-cost ratio		9.0	7.3

* Only for construction and agriculture impacts

Source: NZIER