



Whareroa North Plan Change: Review of the Property Economics Report

A Report for The Proprietors of Hauhungaroa No. 6

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1. Introduction and summary

1. The Proprietors of Hauhungaroa No. 6 (the “**Proprietors**”) have applied to the Taupo District Council (“**TDC**”) for a private plan change to rezone rural land in Whareroa to residential land. The plan change will allow the Proprietors to deliver a development of between 140 and 160 residential properties in Whareroa North (hereinafter referred to as the “**Whareroa Development**”).
2. Property Economics (“**PE**”) was engaged by TDC to prepare a report undertaking an economic analysis of the proposed plan change (the “**PE Report**”).¹ I have been asked by the Proprietors to undertake a peer review of the PE Report.
3. A key finding in the PE Report is that there is material existing supply of residential properties in the Taupo District and Whareroa, such that there will either be no demand for properties in the Whareroa Development, or that any demand will come from property owners shifting from elsewhere in the District. Based on an estimate of the infrastructure costs of the Development (which PE attributes to TDC), PE’s view is therefore that the Whareroa Development will represent an additional cost to the Taupo community but without any associated benefit.
4. However, in summary I find that:
 - a. There will always be an element of uncertainty in forecasting supply and demand for residential properties, and the margin between supply and demand for Taupo and Whareroa could be materially less than estimated by PE. In any case, it is the Proprietors that are in the best position to assess future demand for the Whareroa Development, as they are the ones who have staked their investment in the outcome. To suggest that there will be little demand for the properties in the Development amounts to questioning the expected financial viability of the Proprietors’ past and further investment, implying they have made a decision which is not in their own best interests; and
 - b. The Development will generate benefits to property purchasers (in the form of lower prices and additional supply), the Proprietors, and potentially also to the Taupo District in respect of rates and job creation. Given that it is the Proprietors who incur the initial infrastructure costs (not TDC), it is likely that there will be a net benefit arising from the Whareroa Development.
5. In the remainder of my report I:
 - a. Briefly summarise the key analysis undertaken in, and findings of, the PE Report (Section 2);
 - b. Review PE’s analysis of residential property supply and demand (Section 3); and
 - c. Review PE’s assessment of the costs and benefits of the Whareroa Development (Section 4).

¹ Property Economics (2019), “Whareroa North PPC36 Economic Cost Benefit Assessment”, project no. 51836, November.

2. Summary of the PE Report

6. The overall focus of the PE Report is to assess how the Whareroa Development will affect residential property demand and infrastructure costs in the wider Taupo District and areas proximate to Whareroa (p.5 of the PE Report).
7. In particular, PE first undertakes an assessment of the expected demand for, and supply of, residential dwellings in the Taupo District and Whareroa, generally over a 20 to 30-year time period. Based on this analysis, the PE Report finds that there would be sufficient supply of residential dwellings to meet demand over this period, both with respect to permanent residential dwellings and holiday homes, and in both the Taupo District and Whareroa (and surrounding areas in southern/western Taupo). For example, at p.14 PE states:

This high-level data suggests the current supply of vacant residential zone lots within the District will be sufficient to supply the 2,600 expected demand/growth...

8. Similarly, at p.13 PE states:

...the analysis identifies material existing residential capacity within the southern areas of Taupo.

9. Second, the PE Report argues that Whareroa is not “unique”, in the sense that the characteristics of Whareroa are also found in other nearby locations in the District. For example, PE lists various attributes of Whareroa and states (p.14) that these attributes “are not unique to Whareroa”, and that:

...these choices and attributes are available in other proximate locations to the area...

10. The main implication that PE draws from these findings is that the Whareroa Development will not serve any new residential property demand, but rather it will result in a duplication of existing demand. That is, PE’s finding appears to be that demand for properties in the Whareroa Development will come from property owners shifting from properties elsewhere in the District, rather than from new property owners entering the District.
11. At times, however, PE also appears to be suggesting there will be low (or no) demand for the Whareroa Development, regardless of whether that is new or existing demand. Specifically, at p.16, PE states (emphasis added):

*...the slow growth rates and current large supply of vacant lots in the area **does not suggest high demand for housing product in this particular area**, or material transfer of demand from Kuratau to Whareroa.*

12. Finally, the PE Report sets out an assessment of the costs and benefits of the Whareroa Development. PE estimates costs for infrastructure (roading, water and wastewater, etc) to TDC of approximately \$660,000 (in present-day terms), and argues that various potential benefits do not arise in respect of the Whareroa Development.
13. Accordingly, PE’s view is that the Whareroa Development “represents an additional cost without any additional benefit to the community” (p.27). At p.16, for example, PE states:

Given there is sufficient supply, any development facilitated by PPC36 would duplicate and undermine the current zone and serviced land, increasing the expense of additional infrastructure maintenance costs for the wider community, and resulting [sic] in less intensively used and inefficient community infrastructure.

14. I assess this analysis and the arguments set out in PE’s Report in more detail in the remainder of my report.

3. Residential property supply and demand analysis

3.1. Introduction

15. In the following sections I review PE’s analysis of supply and demand for residential property, both in respect of the wider Taupo District, and for Whareroa in particular. As noted earlier, PE finds that there will be sufficient supply of residential properties to meet demand over the next 20-30 years, both in respect of permanent residential dwellings and holiday homes in the wider Taupo District and Whareroa specifically.
16. Before assessing the rigour of this finding, I start by setting out a fundamental economic proposition that is important to help guide the analysis. It is typically held in economics that economic agents (e.g., individuals and businesses) will make decisions that are in their own best interests. That is, in making a choice, an economic agent will choose a course of action that makes them better off, rather than worse off.²
17. In the context of the Whareroa Development, this proposition would imply that the Proprietors, by facilitating the Development, have assessed that there will be sufficient demand for properties in the Development such that it will earn the Proprietors a competitive return on their investment. That is, there will be sufficient demand such that the Proprietors will be better off, rather than worse off, by undertaking the Whareroa Development.
18. Indeed, I understand that in Environment Court decisions made under the Resource Management Act 1991, a project’s financial viability (i.e., whether it is profitable) is not second guessed by the Environment Court.³ On this basis, it seems a valid proposition that the Proprietors have appropriately assessed that there will be sufficient demand for the Whareroa Development to be commercially viable.
19. I return to the implications of this proposition in more detail below.

3.2. PE’s analysis of Taupo District residential property supply and demand

20. The analysis in the PE Report of supply and demand for residential property in the Taupo District is based on Statistics New Zealand household projections, which show that the District is expected to grow by approximately 1,800 households by 2038 (in what Statistics New Zealand defines as a “medium” scenario). PE states that, including the demand for unoccupied dwellings (i.e., holiday homes), assessed at 30% of total demand,⁴ would take this to 2,600 households.
21. PE compares this demand estimate of 2,600 to an estimate of supply, being an estimate of 5,632 vacant developable properties in the Taupo District. PE concludes from this analysis (at p.12) that there is sufficient supply of developable properties to meet expected demand in the District.
22. I note the relevance of the timeframe over which PE’s supply and demand calculations are made. In particular, of the increase in households in the Taupo District through to 2038, most of the increase occurs in the next ten years, with the Statistics New Zealand medium scenario data reported by PE showing an increase of approximately 1,100 households from 2018 through to

² See, for example, Robert S. Pindyck and Daniel L. Rubinfeld, *Microeconomics*, Seventh Edition, Pearson/Prentice Hall.

³ For example, see *NZ Rail v Marlborough District Council* [1994] NZRMA 70 (HC) and *Re Queenstown Airport Ltd* [2012] NZEnvC 206 at [211].

⁴ This figure appears to be drawn from the *Taupo District 2050 District Growth Management Strategy*, in which is noted that 30% is the average rate of vacant dwellings (primarily holiday homes) in the District.

2028. Including 30% of total demand to account for holiday homes gives demand of approximately 1,600 households in the next ten years.

23. In the Statistics New Zealand high scenario for the next ten years, the increase is approximately 1,800 households from 2018 to 2028, or 2,600 to account for holiday homes.
24. At the same time, only approximately 2,200 of the 5,632 vacant developable properties identified by PE are zoned residential and are consented, with the remaining properties as yet unconsented.⁵ It seems reasonable to assume that consented properties will be developed and available to meet demand in a shorter timeframe than unconsented properties will.
25. These calculations suggest the margin between residential property supply and demand in the Taupo District could be materially less than is estimated in the PE Report, at least in the medium term. That is, demand in the next ten years may be 1,600 properties (in Statistics New Zealand's medium scenario) or 2,600 properties (high scenario), with supply in the order of 2,200 over this period.
26. As a result, there may be a greater need for additional residential properties in the medium term than is suggested in the PE Report. In the context of the Whareroa Development, I understand that the intention is to undertake a staged development, of which approximately 60 properties may be developed within the next ten years.
27. In any event, I consider that an analysis of residential demand in the wider Taupo District provides only broad context. It seems likely that there would be a more distinct demand for properties in southern and western Taupo, so that in the present case it is preferable to analyse supply and demand at this more local level. PE makes the same point, where it states (p.16):

Using supply for the entire district as a measure of all available homes/lots as ready substitutes in comparison to overall demand may not be a suitable measure to project forward demand for holiday homes, particularly in the western Taupo Area.

28. As a result, I consider that greater weight should be placed on the analysis of Whareroa supply and demand, which I consider in the next section.

3.3. PE's analysis of Whareroa property supply and demand

29. My understanding of PE's analysis of supply and demand for properties in Whareroa is as follows:
 - a. On the supply-side, PE identifies 47 vacant lots in Whareroa;
 - b. On the demand-side, PE uses data on demand for new residential dwellings in Whareroa in recent years to estimate average demand of approximately 1.75-2.5 new dwellings per year.⁶ Assuming this average rate per year continues, PE estimates demand of 53-75 new dwellings by 2048;
 - c. PE calculates the difference between supply (47) and demand (53-75) as a shortfall of 6-28 new dwellings by 2048; and
 - d. The implication appears to be that this shortfall is materially less than what the Whareroa Development will provide. That is, while the Whareroa Development will provide between 140 and 160 properties on which new dwellings can be built,⁷ PE states that there is not "high

⁵ Based on identifying the developments in Table 1 of the PE Report for which the stage of development is zoned and some/mostly/all consented.

⁶ PE calculates average demand for new dwellings in Kuratau/Omori/Whareroa over the last 10-16 years of 7-10 new dwellings per annum. PE also notes that over the last six years, Whareroa represented 25% of these dwellings. Applying 25% to the range of 7-10 new dwellings gives the 1.75-2.5 new dwellings figures I report here.

⁷ See the Application for Plan Change, December 2017, at p.4.

demand for housing product in this particular area” (p.16). Rather, PE appears to suggest by its analysis that at most there would be demand for only 28 properties in Whareroa by 2048.

30. I have concerns with this analysis in respect of both the supply-side and demand-side estimates undertaken by PE. On the supply-side, PE notes (at p.12) that some vacant lots in Whareroa are being utilised as holiday sections for camping. However, PE states (at p.12) that “these sites being vacant still represent vacant capacity to accommodate dwelling demand in the future”, so that the full 47 vacant lots is the appropriate supply-side measure. I disagree with this, and consider that the existing supply in Whareroa would likely be less (and could possibly be materially less) than the 47 vacant lots identified by PE.
31. I understand that the current status of existing properties in Whareroa is as follows:
 - a. There are currently 202 lots in Whareroa, all of which are owned by private landowners (they are not owned by the Proprietors);
 - b. Of these, 47 lots are undeveloped, in the sense that they have not had a complete dwelling built on them; and
 - c. Of the 47 undeveloped lots, nine are currently for sale.
32. Whether the 47 undeveloped lots can accommodate future demand depends on whether or not their current owners intend to build a dwelling on the property for their own use. If the 47 undeveloped lots will have a dwelling built on them for the owner’s use at some point in the near future (e.g., in the 30-year period being analysed by PE), then these properties would not be available to accommodate future demand. These properties would be no different from other properties in Whareroa where a dwelling already exists.
33. It would only be if the owners of the 47 undeveloped lots were holding the land vacant and *not* intending to build for their own use that these lots could be considered capacity that can accommodate dwelling demand. This may be the intention of the owners of the nine lots that are currently for sale. However, it is difficult to know the intentions of the owners of the remaining 38 undeveloped lots in this regard. A relevant New Zealand study on this issue is that of Memon and McFarlane (2014), who randomly surveyed owners of vacant land in Auckland and found a range of different intentions for the future use of this land, but with the “most common motive” being to build a family home or holiday home.⁸ While this Auckland study may not be perfectly applicable to the intentions of landowners in Whareroa, it nonetheless indicates intentions for vacant land can be quite varied, and can include the owner building a dwelling for their own purposes.
34. Of note also, I understand that of the existing 38 undeveloped lots in Whareroa that are not currently for sale, four are currently being built on, five have been partially built on, and for a further six the owner is looking to build. The point noted by PE, that these landowners utilise their sites as holiday sections for camping, may also suggest an intention to ultimately use the property for their own purposes.
35. It therefore cannot be assumed that all 47 undeveloped lots in Whareroa will be available to accommodate future demand, as is done in the PE Report. The evidence of existing building and use as holiday sections suggests that many of these lots will ultimately be built on by the landowners for their own purposes. As a result, the number of lots available to accommodate future demand will likely be less than 47, and it could possibly be materially less if the majority of existing landowners are intending to develop these lots for their own purposes.
36. On the demand-side, PE’s estimate of demand of 1.75-2.5 new dwellings per year in Whareroa is based on the average new dwellings in Kuratau/Omori/Whareroa (combined) over the last 10-16

⁸ A. Memon and K. McFarlane (2014), “Long-term vacant residentially zoned land in Auckland: reasons for prolonged land vacancy and development potential”, Auckland Council Technical Report TR2014/022, September.

years, and Whareroa's share of this over the last six years. However, residential property demand in Whareroa has typically coincided with the release of new lots for sale, with periods of strong demand occurring at these times, followed by slower but more stable demand. In particular, I understand that 166 of the existing properties in Whareroa were released in the period 1987-1989, and a further 36 were released around 2002-2003. I understand that most of these properties were sold when they were released to the market. Over the last two years, there have also been approximately six sections sold per year in Whareroa.⁹

37. There will always be an element of uncertainty in forecasting supply and demand for residential property, particularly for holiday homes and over a relatively long timeframe such as the 30-year period analysed by PE. Indeed, I note that the Statistics New Zealand household projections referred to earlier are prepared in three scenarios (low, medium, and high), which often vary substantially,¹⁰ indicating the uncertainty in making such projections. This uncertainty may be greater in respect of holiday homes, for which demand can be quite variable and driven more by factors such as the state of the economy.¹¹
38. Given this uncertainty, and the evidence that demand in Whareroa has coincided with the release of new lots for sale, PE's measure of new dwellings in Whareroa over the last six years is unlikely to be a good measure of future residential demand for dwellings in the forthcoming 30-year period.
39. Even if PE's analysis were correct, and there was a shortfall of only 6-28 properties in Whareroa over the next 30 years, then it would suggest that there would be very little demand for the 140-160 properties in the Whareroa Development. However, this would directly contradict the proposition I set out earlier; that is, it would imply that the Proprietors are willing to make an investment in the Development without there being sufficient demand to earn a competitive return on that investment.

3.4. Summary

40. In summary, I find regarding the analysis of residential supply and demand set out in the PE Report that:
 - a. In the medium term (e.g., the next ten years), the margin between residential supply and demand in the Taupo District may be much thinner than is shown by PE's analysis over a longer period. The intention of the Whareroa Development is to have some properties available in the next ten years;
 - b. In any event, analysis of residential supply and demand in the wider Taupo District provides only broad context, and I consider that greater weight should be placed on the analysis at a more local level;
 - c. At that local level, the supply of vacant properties in Whareroa is likely to be less than estimated by PE, while PE's measure of demand is unlikely to be a good measure of future residential demand for dwellings in the forthcoming 30-year period; and

⁹ Letter from Stephen Sanderson, Bayleys Turangi, 3 April 2019, filed with TDC in respect of these proceedings.

¹⁰ For example, the medium household projection scenario reported in Figure 2 of the PE Report shows growth of approximately 1,800 households from 2018 to 2038, while the high scenario shows growth of approximately 2,600 households over this same time period.

¹¹ As an example, a study in Australia found that prices for holiday homes in the beach-side suburb of Palm Beach were nearly three times more volatile than prices for Sydney residential homes, suggesting materially more demand and supply volatility for the former. See Christopher Joye (2018), "Why luxury homes are dud investments", *Australian Financial Review*, 17 August 2018, available at: <https://www.afr.com/policy/why-luxury-homes-are-dud-investments-20180817-h14365>

- d. There will always be an element of uncertainty in forecasting supply and demand for residential properties, and it is the Proprietors that are in the best position to assess this, as they are the ones who have staked their previous investment in the outcome. To suggest that there will be little demand for the properties in the Whareroa Development amounts to questioning the expected financial viability of the Proprietors' past and further investment which is inconsistent with the proposition that economic agents generally make decisions which are in their own best interests.

4. Cost benefit analysis

4.1. Introduction

41. In the following sub-sections I review PE's analysis of the costs and benefits arising from the Whareroa Development.
42. As an overarching comment, it is useful to 'step back' and consider the cost benefit analysis at a high level. An assessment of costs and benefits takes into account the net private benefits (e.g., to producers and consumers directly affected by a proposal) and net social benefits, where the latter are the external effects of a proposal on 'third parties'. If an economic agent is willing to undertake a proposal, then it can be assumed that the net private benefits of the proposal are positive. This is consistent with the proposition I set out earlier, that economic agents undertake actions which are in their own best interest. Accordingly, the relevant question from a cost-benefit perspective is whether those net private benefits exceed any costs arising from the external effects on third parties.
43. In the present case, I note that external effects such as visual and landscape effects, and ecological effects have been assessed by the Proprietors in the Application for Plan Change, in which it is concluded (at p.57) that any such effects are able to be managed by existing and proposed plan provisions.
44. If it is the case that any external effects are appropriately managed, then the overall benefits of the Whareroa Development would exceed the costs, on the basis that the net private benefits will be positive.
45. I provide a more detailed assessment of PE's cost benefit analysis below. Much of PE's assessment hinges on the relative "uniqueness" of Whareroa, and accordingly I consider this issue in the next sub-section, before turning to PE's analysis of the costs and benefits.

4.2. Unique demand

46. A key component underlying PE's assessment of the costs and benefits of the Whareroa Development is its consideration of whether Whareroa is "unique" i.e., whether Whareroa has certain characteristics that make it unique from other nearby locations in the Taupo District. PE's finding is that Whareroa is not unique. For example, PE lists various attributes of Whareroa and states (p.14) that these attributes "are not unique to Whareroa", and that:

...these choices and attributes are available in other proximate locations to the area...

47. In my view, economists do not have sufficient expertise to make a qualitative assessment of the various characteristics identified by PE, such as amenity and scenic value, the extent of a "village style atmosphere", or the remoteness of an area. PE appears to acknowledge this (despite making the above claims in respect of the (lack of) uniqueness of Whareroa), where it states (p.16):

Property Economics are not experts to evaluate the comparative merits and value of landscape amenities...

48. On this basis, a proper qualitative assessment of the uniqueness attributes of Whareroa is best left to a suitably qualified expert who has direct knowledge of the location and surrounding area.
49. I recognise, however, that economists may be able assess economic data to make some inferences on the value of the attributes of Whareroa. In this regard, PE goes on to complete the above quoted sentence at p.16 by stating:

...however the slow growth rates and current large supply of vacant lots in the area does not suggest high demand for housing product in this particular area, or material transfer of demand from Kuratau to Whareroa.

50. However, as I noted above, PE has likely overestimated the “current large supply of vacant lots” in Whareroa. Indeed, since all 202 of the current lots in Whareroa have been purchased from the Proprietors by private landowners, it suggests there has in fact been demand in Whareroa, even if in some cases that demand has still resulted in a lot without a dwelling on it.
51. Similarly, as discussed above, while there may have been “slow growth rates” in demand for residential properties in recent years, this has not been the case at the times when Whareroa properties have been released to the market. Again, since all of the current 202 lots in Whareroa have been purchased by private landowners, this suggests that these landowners see value in this area. In any event, the “slow growth rates” proposition is undermined by the evidence that over the last two years there have been approximately six sections sold per year in Whareroa.¹²
52. Moreover, it is incorrect for PE to suggest (at p.16) that “the market is not currently demanding an additional supply of homes/lots in these areas”. Returning to the proposition I set out earlier, the Proprietors have made a decision to invest and supply additional homes in Whareroa, and it should be presumed from this that there is sufficient demand to meet this supply. To put this another way, the Proprietors have revealed by their decision to invest that “the market” is in fact demanding an additional supply of homes in Whareroa.
53. In sum, while economists are unlikely to have sufficient expertise to qualitatively assess the “uniqueness” of Whareroa, they can nonetheless draw some inferences from economic data and behaviour. In particular, historic demand for homes in this area and the Proprietors’ decision to invest suggest that Whareroa must have some unique qualities, relative to other areas.

4.3. Assessment of benefits and costs

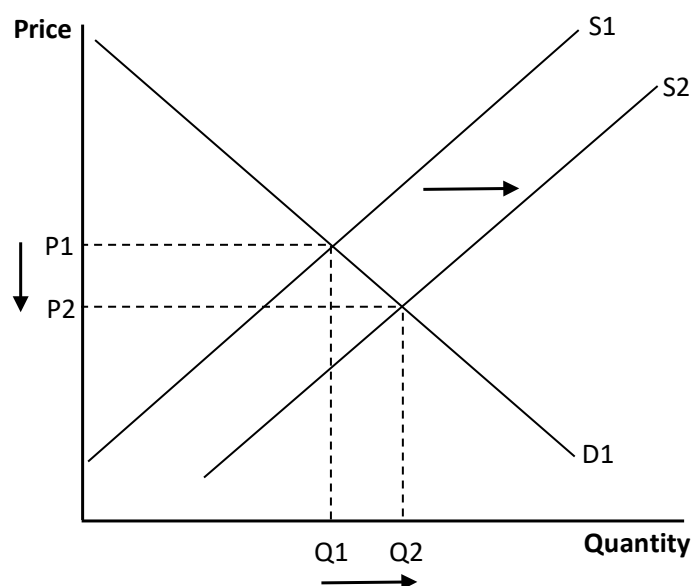
4.3.1. Demand-side and supply-side benefits/costs

54. It is helpful to start by setting out an economic framework for the benefits and costs of the Whareroa Development. An assessment of benefits and costs typically starts by specifying the ‘factual’ and ‘counterfactual’ scenarios – see, for example, the New Zealand Treasury’s “Guide to Social Cost Benefit Analysis”, which lists this as the first step in undertaking a cost benefit assessment.¹³ The factual is the state of the world with the proposed activity being assessed i.e., if the Whareroa Development were to proceed. The counterfactual is the situation that would exist if the activity did not go ahead i.e., if the Whareroa Development were not to proceed, with all else remaining unchanged between the factual and counterfactual.
55. The impact of the Whareroa Development can then be assessed within a standard economic framework of supply and demand. In Figure 1 I show this framework, with an upward sloping supply curve (“S1”) representing the supply of residential housing, and a downward sloping demand curve (“D1”) representing the demand for residential housing. The market price (“P1”) and quantity (“Q1”) are given by the point at which these supply and demand curves intersect.
56. The Whareroa Development would lead to an increase in the supply of housing – that is, an outwards shift of the supply curve, leading to the new supply curve “S2”. With this additional supply in the market, the market adjusts so that prices fall to P2, and market quantity increases to Q2.

¹² Letter from Stephen Sanderson, Bayleys Turangi, 3 April 2019, filed with TDC in respect of these proceedings.

¹³ New Zealand Treasury (2015), “Guide to Social Cost Benefit Analysis”, July.

Figure 1: Supply and demand framework for assessment of costs and benefits



57. It can be seen from Figure 1 that the Whareroa Development provides additional residential properties to the market, while also lowering price, which is a benefit to consumers. PE recognises this, where it states (p.24):

An increase in the options available in the market provides additional residential choice. This increases the flexibility in price points and increases competition in the market to the benefit of consumers as is...

58. However, PE goes on to state that this is not a benefit solely attributable to the Whareroa Development, because all new residential development in the District will generate this benefit. I disagree with PE. While other new residential developments will generate a benefit, as noted above the correct approach to assessing costs and benefits is to consider the factual relative to the counterfactual; that is, with the Whareroa Development versus without the Whareroa Development. It is irrelevant that all new residential developments will generate a benefit, because these new residential developments can be assumed to occur in both the factual and counterfactual i.e., it is assumed that all else remains unchanged between the factual and counterfactual.

59. PE also appears to rule out any benefit from increased choice and lower prices because (p.24):

The provision of additional lots/supply in Whareroa North has the potential to simply redistribute demand from other holiday home locations around the lake.

60. PE's argument here follows from its view that Whareroa is not unique. As discussed above, the evidence suggest that Whareroa may in fact have some unique characteristics.

61. In any case, even if PE was correct that demand for holiday home locations will remain unchanged and will simply be redistributed around the District, the Whareroa Development would still result in an increase in the number of properties available for a given level of demand. This provides the demand-side with greater bargaining power, again leading to a benefit from more choice and lower prices. In effect, the analysis shown in Figure 1 produces a benefit to consumers regardless of whether or not Whareroa is unique.

62. The framework provided by Figure 1 also illustrates net benefits arising on the supply-side. That is, suppliers of residential properties (in the case of the Whareroa Development, this is the

Proprietors) receive some benefit from the increase in supply. This benefit is effectively the profit from the increased supply i.e., the net revenue received from the sale of the properties less any costs incurred in developing them. As I've set out earlier, given that the Proprietors are willing to invest to undertake the Development, it is reasonable to assume that the benefits they receive will exceed the costs.

63. It is also important to note that it is the Proprietors that will incur the infrastructure costs associated with the Development, a point noted also by PE (at p.22 where PE states "the assets being depreciated have been paid for originally by the proponents"). The analysis undertaken by PE appears to attribute these costs to TDC, despite these costs being incurred by the Proprietors.
64. PE's argument here is that TDC will ultimately have to replace the infrastructure assets. PE states that (p.22):

The depreciation is based on expectations on the future liability of Council having to replace infrastructure assets at the end of their useful economic life.

65. It may be correct that TDC is required to incur this replacement cost, however in many cases this will occur in the distant future. This is because many of the assets identified in Table 3 of the PE Report have very long lifespans. The average lifespan of the assets identified in Table 3 is 50 years,¹⁴ with only signs (11 years), streetlights (13 years), CCTV'd wastewater (10 years) and SL-Rat sewer pipe (5 years) have lifespans less than 20 years.
66. It would be a relatively unorthodox approach to include the replacement cost of assets with such long lifespans (even if via a depreciation schedule as PE has done) in a cost benefit analysis. This would be equivalent to extending the analysis of costs and benefits 50-plus years into the future. Cost benefit analysis is typically undertaken over a relatively short timeframe (e.g., 20 years), for two reasons:
 - a. When costs and benefits are incurred far into the future, they have very little value when discounted back to present day terms; and
 - b. It becomes more uncertain to forecasts costs and benefits out into the distant future.
67. The only cost identified by PE that is relevant here are the "District costs" (of \$7,000 per annum) identified in Table 3 of the PE Report. I understand that this relates to ongoing maintenance costs, which are incurred by TDC (not the Proprietors) in respect of the infrastructure, and as such these are a relevant cost to include.

4.3.2. Other benefits and costs

68. I also address briefly the other benefits and costs identified in the PE report.
69. PE considers whether the additional rates received by TDC are a benefit. Generally the payment of rates would not be considered a (social) benefit or cost, because it is a 'transfer payment' from one party (the ratepayer) to another (the local authority) without any associated resource use. I note that the New Zealand Treasury's "Guide to Social Cost Benefit Analysis" states (at [17]) that "It is usual practice to ignore gainers and losers who are parties to transfer payments, such as taxes, subsidies and welfare payments".¹⁵
70. However, if the cost benefit analysis is focused only on the Taupo District, and rates payments are made by non-resident ratepayers to the TDC, then the payment of rates may be considered a net benefit (rather than a transfer payment). This may be the case, as PE recognises (at p.24), if "the demand [for the Whareroa Development] is entirely unique". To put this another way, if demand for the Whareroa Development comes entirely from non-residents that are not currently ratepayers

¹⁴ Excluding swales, for which no lifespan is listed in Table 3, and District costs which are an annual maintenance cost.

¹⁵ New Zealand Treasury (2015), "Guide to Social Cost Benefit Analysis", July.

in the District, rather than from existing demand being redistributed around the District, then there may be a benefit arising from the payment of rates. This may well be the case if ownership of the Whareroa Development is similar to existing ownership in Whareroa: of the 202 current lots in Whareroa, only 17 are occupied by permanent residents,¹⁶ with many owned by Auckland and Waikato residents.¹⁷ Data provided by TDC shows a similar result: of 208 rates notices associated with Whareroa properties (I understand this number exceeds the 202 lots because of the possibility of double ups for a given property), only 36 are delivered to addresses in the Taupo District. As I have also explained above, the evidence suggests the Whareroa Development may have some unique qualities relative to nearby areas.

71. PE also considers whether there is any potential benefit of job creation arising from the Development. Whether or not jobs are included as a benefit depends on the extent of unemployment. If unemployment is relatively low, then any new jobs would simply be transferred from elsewhere, rather than drawn from the unemployed, and there would be no benefit from job creation.¹⁸ Given that unemployment is currently relatively low,¹⁹ any jobs that arise from the Whareroa Development are likely to be drawn from jobs elsewhere, rather than from the unemployed. Accordingly, I agree with PE that there is unlikely to be any material benefit from job creation, at least if the analysis is undertaken for New Zealand as a whole.
72. However, if the analysis is just focused on the Taupo District, it may be that any new jobs created by the Development are drawn from other regions in the country. If this were the case, then there would be a benefit arising from the new jobs created in the District.
73. PE also considers whether there is any benefit arising from the utilisation of spare capacity within the infrastructure (e.g., roading and water) that serves existing properties in Whareroa. As PE notes (p.26), the utilisation of this infrastructure is an avoided cost, in that additional costs do not need to be incurred for this infrastructure for the Whareroa Development. I agree with PE that this is already captured in the lower infrastructure costs of the Development, and as such it is not a benefit (when comparing the net benefits with and without the Whareroa Development). It may, however, be a relevant consideration if comparing the Whareroa Development with other potential developments for which this increased utilisation of existing infrastructure would not occur.

4.4. Summary

74. In summary, I find regarding PE's assessment of the benefits and costs of the Whareroa Development that:
 - a. The Whareroa Development will likely generate a net benefit to consumers, in the form of lower prices and an increased quantity of residential property. This benefit will occur regardless of whether or not Whareroa is unique;
 - b. The Whareroa Development will likely generate a net benefit to the Proprietors, who will incur the infrastructure costs (incorrectly identified by PE as being incurred by TDC) but should be expected to receive benefits in excess of these costs;

¹⁶ Application for Plan Change, December 2017, at [2.2.1].

¹⁷ Application for Plan Change, December 2017, at [2.2.2].

¹⁸ See, for example, New Zealand Treasury (2015), "Guide to Social Cost Benefit Analysis", July at paragraphs [48]-[56].

¹⁹ Unemployment data is available from Statistics New Zealand at the regional council level. For the December quarter 2019, the unemployment rate in the Waikato Region was 3.4% (Statistics New Zealand, Household Labour Force Survey, Labour Force Status by Sex by Regional Council, sourced from Infoshare).

- c. The Whareroa Development may generate a benefit in the form of rates payments to TDC, to the extent that those rates payments are 'new' rates received from those that do not currently pay rates in the District;
 - d. The Whareroa Development may generate a benefit from job creation, to the extent that the focus is on the Taupo District and it results in a transfer of jobs from other regions in to the District; and
 - e. The Whareroa Development will result in some costs incurred by TDC relating to the ongoing maintenance of the infrastructure.
75. Overall, based on my assessment of the benefits and costs, I disagree with the conclusions in the PE Report that the Whareroa Development “represents an additional cost without any additional benefit to the community” (p.27).

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