

Before the Central Otago District Council

under: the Resource Management Act 1991

in the matter of: Plan Change 19 to the Operative District Plan

and: **Sugarloaf Vineyards Limited**
Submitter

and: **Central Top Property Investments 2015 Limited**
Submitter

and: **Central Otago District Council**
Planning Authority

Evidence of Natalie Hampson (Cromwell Yield Assessment)

Dated: 1 June 2023

EVIDENCE OF NATALIE HAMPSON

INTRODUCTION

- 1 My full name is Natalie Dianne Hampson. I am a Director at Market Economics Limited (*M.E.*). I have held this position since mid-2019. I hold a Master of Science degree in Geography from the University of Auckland (first class honours).
- 2 I have worked in the field of economics for over 20 years for commercial and public sector clients. I joined M.E in 2001, and I have specialised in studies relating to land use analysis, assessment of demand and markets, the form and function of urban economies and growth, policy analysis, and evaluation of economic outcomes and effects, including costs and benefits.
- 3 I have applied these specialties in studies throughout New Zealand, and across most sectors of the economy, notably assessments of new developments, plan and policy changes, urban and rural planning (including under National Policy Statements) and understanding specific sectors such as the retail, commercial, industrial, residential, tourism, education, recreational marine, aquaculture, liquor licencing and major event industries. I am currently an associate member of the NZ Planning Institute and a member and regional committee treasurer of the Resource Management Law Association.
- 4 With respect to the scope of this evidence, I was the project manager and contributing author of two Housing and Business Development Capacity Assessments (*HBAs*) for Queenstown Lakes District Council (QLDC) and one HBA for Rotorua Lakes Council (RLC) under the National Policy Statement – Urban Development (*NPS-UD*). I have also been involved in the housing intensification plan changes for QLDC, RLC and Nelson City Council and capacity modelling for RLC's Future Development Strategy. I have a detailed understanding of Council requirements under the NPS-UD and best practice residential capacity modelling.
- 5 M.E's capacity modelling for HBAs is far more extensive than the projects I have been directly involved in. We are also the HBA provider for Napier, Hastings, Waikato, Hamilton and Waipa and provide capacity modelling services for Tauranga City, Auckland Council and Gisborne. Ministry for the Environment reviews of our capacity modelling (in multiple HBAs) has confirmed that our approaches are robust and best practice.

CODE OF CONDUCT

- 6 Although this is not an Environment Court hearing, I note that in preparing my evidence I have reviewed the Code of Conduct for

Expert Witnesses contained in the Environment Court Practice Note 2023. I have complied with it in preparing my evidence on technical matters. I confirm that the technical matters on which I gave evidence are within my area of expertise, except where relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from my opinions expressed.

SCOPE OF EVIDENCE

- 7 My evidence relates to a high-level peer review of the Cromwell Yield Assessment (September 2022) completed for Central Otago District Council (CODC) by Rationale Limited (*Rationale*). The Rationale report is stated as a yield calculation of Plan Change 19 (PC19) as well as some private plan changes in Cromwell Ward. It also considers the sufficiency of this capacity relative to forecast housing demand.
- 8 I was asked to undertake this review by submitters Sugarloaf Vineyards Limited and Topp Property Investments 2015 Limited. This follows concerns being raised by the planning consultant for those submitters, Ms Skuse, at the Stage 1 hearing, with the Rationale report only being made available a little time before then (as part of the s42A report for Stage 2). I understand that Ms Skuse acknowledged that she was not qualified in economics or market demand matters, but raised concerns from more of a practical and logical basis.
- 9 The submitters subsequently engaged me to undertake this high level peer review, and I understand will need to seek leave to have that evidence received by the Panel "out of time". I leave matters of process to the submitters and their representatives to address.
- 10 My evidence is not on the merits or otherwise of PC19.
- 11 In preparing my evidence, I have also reviewed and considered the following:
 - 11.1 The Addendum – Sensitivity Analysis by Rationale dated April 2023. This additional work appended to the main report removed the capacity of the two private plan changes in Pisa Moorings (Cherry Orchard and Parkburn) but retained the Golf Course land previously included in the main report. It also tested a 400sqm minimum lot size for the Low Density Residential Zone (LRZ) instead of the notified 500sqm minimum lot size.
 - 11.2 CODC's online (GIS) mapping of the Operative District Plan and changes under PC19. This includes aerial photographs and details on property parcels.

- 11.3 The s42A report for PC19, with regard to recommendations relating to large greenfield land parcels, including recommendations to treat some land as Future Growth Overlay (*FGO*). I have considered the implications of these recommendations on the dwelling yield results.
- 12 My review does not cover the development (and detail) of dwelling demand projections for Cromwell Ward by Rationale.
- 13 I have not contacted Rationale or CODC for this review of the yield assessment. It is a desktop review based only on the information provided in the Rationale reports stated above, and my interpretation of that information. Ideally, liaison with Rationale would be the next step in a review process to discuss questions and test assumptions arising from my review. Again, I leave these process matters to the submitters and their representatives.

SUMMARY OF EVIDENCE

- 14 I have used the information and tables contained within the Rationale report and addendum to create a model that replicates the reported dwelling yields. Using this model, I have deduced the approach that appears to have been applied by Rationale.
- 15 I have identified a number of potential issues with Rationale's approach. The compounding effect of these issues means that dwelling yields associated with PC19 and other private plan change/large greenfield areas may be substantially overstated, especially in the short-medium term.
- 16 Key limitations I have identified (and that warrant further investigation) include:
- 16.1 The strong possibility that designated land has been included in greenfield capacity calculations. This could have a significant effect on overstating greenfield LRZ dwelling yields.
- 16.2 It appears that the model aggregates land parcels in order to work out theoretical plan enabled capacity – thus having no regard for fragmented ownership and the size and location of existing dwellings in relation to property boundaries. Parcel level analysis is essential for calculating net additional dwelling capacity under an infill development pathway. An aggregate model is also highly likely to overstate infill capacity.
- 16.3 While the report uses the term 'feasible' take up, the model does not include any consideration of the commercial feasibility (profitability) of residential development for

different dwelling typologies and how this might change over time.

- 16.4 The Rationale report does not consider the timing of planned infrastructure (i.e. three waters) and how this will affect the timing of large scale greenfield developments. This applies in Pisa Moorings and for the Golf Course according to the s42A report.
- 16.5 Current dwellings as a share of theoretical plan enabled capacity under PC19 in each zone extent has been used as a guide to feasible take up of subdivision potential. Current dwellings have developed over a long period and under different zoning and market conditions and are therefore not a reliable guide to the future take up of new subdivision opportunities, especially in the MRZ.
- 16.6 While the Rationale report provides no detail on the type of dwellings that can be developed in the MRZ on 200sqm minimum lot sizes, I have assumed that this will be primarily duplex and terraced housing. Demand for these typologies is largely untested in Cromwell and it will take time for market preferences to shift. On that basis, take up in the MRZ may be overstated in the short and potentially medium term.
- 17 These, and other potential issues identified in my review are not able to be further verified (or discounted) without further detail provided by Rationale. Ideally this would be the next step in the review process. In that absence of further assessment, I believe the yields and sufficiency of PC19 in the short-medium term should be relied on with caution.

EVIDENCE

Summary of the Rationale Approach

- 18 The Rationale report is a clearly set out summary of the analysis that was completed for the Cromwell Ward. The tables cover most of the key assumptions, inputs and outputs. I have not found any inconsistencies in the tables.
- 19 Using the information contained in the report, I was able to replicate most of the dwelling calculations¹ by integrating the various tables and following the process set out in Figure 2. This includes generating existing dwelling supply, plan enabled capacity (*PEC*) and 'feasible' capacity by the three classes of land parcels modelled and by zone and location. Where the meaning of some inputs/assumptions/terminologies used were not immediately clear

¹ In an Excel model.

from the report, I was able to derive those same numbers – thus understanding their context in the modelling process.

- 20 The Rationale yield assessment starts as a parcel level analysis. As an initial step, the model tags land parcels to the proposed residential zone in PC19 in each township (and in rural areas included in the scope of PC19). Using the area of each land parcel, divided by the minimum lot size of its proposed zoning, the land parcels are then classified as follows:
- 20.1 *Brownfield – Small lots: sections smaller than the 2x minimum lot size.* This means that these sections are only capable of containing one dwelling as they cannot be further subdivided. They should have no infill capacity² (unless they are currently vacant) and while the site could be redeveloped (i.e., existing house demolished and a new dwelling constructed), there is no net increase in the dwelling capacity.
- 20.2 *Brownfield – Large lots: sections up to 10x the minimum lot size.* My analysis indicates that across the Low Density Residential Zone (LRZ) and the proposed Medium Density Residential Zone (MRZ), that sections in this classification are on average around 4x the proposed minimum lot size. This means, that for most sections in this classification, they *may* yield 3 additional dwellings if the site contains an existing dwelling under an infill pathway, or they would definitely yield 3 net additional dwellings under a redevelopment pathway. If the section was 5x the minimum lot size (and contained an existing dwelling), it *may* yield 4 additional dwellings under infill, or would yield 4 net additional dwellings if redeveloped, etc.
- 20.3 *Greenfield – sections larger than 10x the minimum lot size.* These sections may or may not contain an existing dwelling(s).
- 21 The Rationale report gives the impression that the yield assessment does not continue at a parcel level. Rather, the report suggests (in several ways) that the area of all sections is aggregated for each classification (above), zone and township combination. This is an important assumption to confirm.³
- 22 I am not aware of any capacity assessment that has been carried out at an aggregate level rather than at the parcel level. An

² Infill is where additional sections (dwellings) can be created on the parcel without needing to remove the existing dwelling (i.e., adding a house(s) in the front yard or rear yard).

³ For example, Rationale may have carried out a parcel level analysis of yield but used aggregate results for the purpose of reporting.

aggregate model assumes high levels of lot amalgamation which, in existing urban areas, is very difficult, costly and time consuming.

- 23 That aggregate land area in the Rationale model is then assumed to be:

23.1 divided by the minimum lot size of the zone to give the theoretical number of lots able to be subdivided (this can be considered as gross PEC);

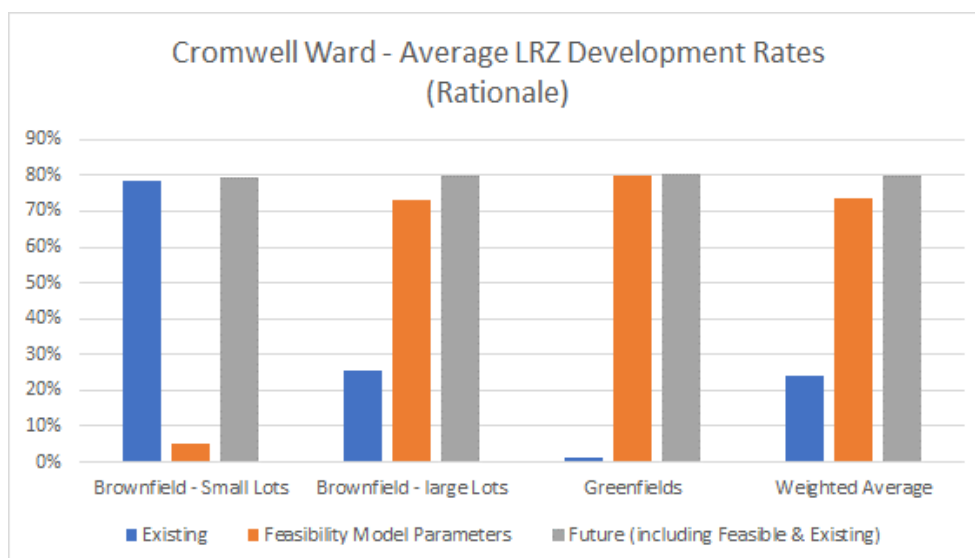
23.2 from which, the total number of existing dwellings in each zone and township is deducted (2019 rating database being the source of that dwelling count) to give a net PEC.

- 24 For greenfield land parcels, an intermediate step is applied where 20% (Large Lot Zone (LLZ)) or 30% (LRZ, MRZ) of the aggregate land area is subtracted to allow for “*infrastructure*”. These are generally accepted average percentages to allow for roads, standard landscape buffers and other non-developable land area in larger scale developments. They are therefore appropriate for calculating PEC.

- 25 Importantly, by taking away existing dwellings to estimate the net PEC, the Rationale model seems to apply only the infill pathway to achieve dwelling growth. This assumption is supported (through my replication of the model) by the feasibility model parameters only being applied to the net PEC (that is, the number of new dwellings that could theoretically be created over and above the existing dwellings). I discuss this further in my evidence below.

- 26 The Rationale model then calculates feasible take up or capacity by applying a percentage of net PEC that is expected to be subdivided at the minimum lot size and have a dwelling constructed. It is a target, determined from the current (2019) ratio of existing dwellings to plan enabled capacity in each zone/location under PC19. In other words, it considered how much of the theoretical capacity under PC19 was already taken up by existing dwellings, and then assumed continued take up of the subdivision opportunity over and above that baseline. Put another way, it looks at the levels of take up currently in the existing developed areas (particularly the Brownfield – Small lots land) and assumes that greenfield areas will achieve similar development outcomes. This is summarised in Figure 1 below for the LRZ.

Figure 1 – Share of LRZ Plan Enabled Capacity Taken Up – Current and Projected – by Section Classification



- 27 Care is needed in this approach, because the existing development rates (i.e. share of PEC enabled under PC19 that is taken up by existing dwellings) are not a reflection of take up under the provisions proposed. They are simply the number the dwellings that have been built (almost entirely via infill development) over a long period of time under the Operative District Plan (and other previous plans) that happen to be located in the extent of each zone proposed by PC19. As such, they are not necessarily a reliable guide as to how likely (or how quickly) new minimum lot sizes will be taken up by the market. This is particularly the case in the MRZ. They are certainly not a reliable basis for estimating the likelihood and rate of redevelopment occurring in Cromwell Ward.
- 28 While the yield assessment does not state any timeframes that apply to the target yield, the report implies that the timeframe is 2054.
- 29 The feasibility assumptions assume greater take up of subdivision potential within greenfield sites and slightly lower take up of further subdivision potential within Brownfield – Large lot sites. This in itself is reasonable, as it reflects the capability and economies of scale of large scale development (typically by experienced developers) compared to that of landowners who have the potential to subdivide off 1-3 additional lots.
- 30 Confusingly, Table 3 of the Rationale report identifies feasibility (take up) parameters for parcels classified as Brownfield – Small lot. For example, that 10% of such potential parcels in the MRZ will be taken up (by 2054). Recall, these properties should have no net PEC

against which feasible take up should be applied. I return to this issue further below.

- 31 By applying the target percentage take up assumptions for each zone and section classification to net PEC, the Rationale model generates estimates of net additional dwelling capacity by class, zone and location. There is no detail provided in the report on how that PC19 capacity is achieved over time. The graphs in Section 5 of the report show the combined total additional PC19 dwelling capacity for each town, the rural area, and the Ward as a whole as at 2054. The Rationale approach simply straight-lines that supply growth between 2019 and 2054 – thus assuming a constant rate of annual dwelling growth.
- 32 On the basis that the same graphs show the private plan change (plus Golf Course) feasible supply spread evenly over 2019-2054, I have assumed that Greenfield (and other Brownfield) supply attributable to PC19 is also assumed to occur incrementally over the full time period, starting in year 1 (2020). I discuss this further below.

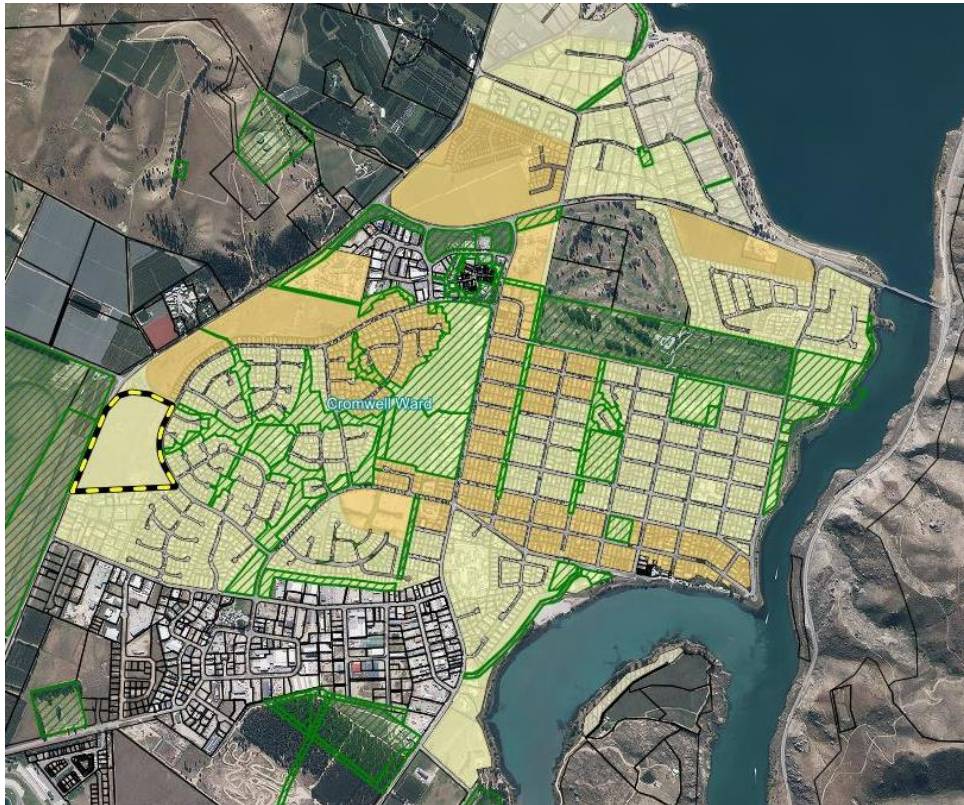
General Issues and Limitations

- 33 Having described how I understand the Rationale yield assessment is working (which would need to be confirmed), this section briefly discusses some general issues and/or limitations that I have identified.
- 34 **Developable Land**. An important first step in best practice capacity modelling is to work closely with the council to exclude areas of land zoned residential that do not actually provide capacity for residential development. This may include land that is designated for other uses, unformed roads, any buffers/setbacks (including national grid, riparian, no-build or other landscape buffers) that would not be individually owned, or contaminated land. It may include land that is highly impacted by certain natural hazards⁴. Significant Natural Areas would also need to be excluded. Under the NPS-UD capacity modelling guidance, it would also exclude any land where housing would be discretionary or non-complying as this is not considered 'plan enabled'. It would also be important at this stage of the modelling to acknowledge any existing covenants that may preclude or limit development on particular parcels.
- 35 There is no detail provided in the report that indicates that this step has been carried out. I have not gone to the extent of trying replicate (using GIS) the land areas of each of the parcel classifications by zone/location to verify the stated land areas in the

⁴ Some hazards impact on the cost (feasibility) of development rather than impact on plan enabled capacity per se.

report. However, using the example below, I believe that there is cause for concern that this important step was not carried out.

Figure 2 – Map of Proposed PC19 Zoning – LRZ and MRZ Focus in Cromwell Township



- 36 Figure 2 shows the extent of LRZ and MRZ zoning in Cromwell township. While not shown in Figure 2, Rationale includes the three parcels in the Golf Course as Greenfield LRZ zone capacity in their Cromwell figures (indicative PEC of 462 dwellings (@500sqm lots), and feasible take up of 370 based on Rationale's 80% assumption).
- 37 The Rationale report states that there is 254ha of gross LRZ zoned land area in Cromwell that falls into the category of Greenfield sections (that is sections that are greater than 10x the minimum lot size of 500sqm)⁵. The highlighted section in Figure 2 is located on Waenga Drive and qualifies as Greenfield land. This site is 12.7ha, and if we ignored the building line restriction along the western boundary that reduces the developable land area of this site, it would make up 5% of total Greenfield LRZ land in Cromwell township according to the Rationale model.

⁵ Appendix C – Rational Report.

- 38 The three parcels included in the Golf Course⁶ make up another 13% of that gross land area in the Cromwell LRZ. Visually I can identify relatively few other land parcels in the proposed LRZ in Cromwell township that would also qualify as Greenfield parcels and allow the Waenga Drive site to represent only 5% of the total.
- 39 I have included the designations layer from the Operative District Plan in Figure 2. I am concerned that the 254ha of Greenfield LRZ land in the Rationale calculations includes land designated for other purposes (including school and reserves).
- 40 If this is the case, then the additional feasible capacity of the LRZ in Cromwell of 2,790 dwellings⁷ is significantly over-stated. The same issue potentially applies to other zones and locations in the model.
- 41 **Infill Development Capacity.** As an indication of best practice, the NPS-UD guidance for capacity modelling requires practitioners to consider infill capacity separately from redevelopment capacity. As noted above, the Rationale model appears (but subject to confirmation) to be only an infill capacity model. It is therefore important that infill capacity is robustly approached as it is more complex to calculate than redevelopment capacity.
- 42 For example, it is essential for infill capacity (that is, the net additional count of dwellings that can be achieved without removing existing dwellings), to be assessed at the parcel level. This is so that the location of the existing dwelling (and ancillary buildings like separate garages and large sheds) relative to the property boundaries can be understood. Once the residual land area of the parcel is known spatially, then any setbacks and yard requirements in District Plans can be applied/tested. Then driveway/accessway standards need to be applied. For example, the OPP requires 3.6m minimum legal width to create 1 rear lot in urban areas, and a minimum of 6m legal width to create 2-4 rear lots.⁸ Once the geometry of all these zone standards/rules are applied, the residual and functional land area can be checked to see if it meets minimum lot requirements.
- 43 By following this process, the existing dwelling is not forced to occupy the new minimum lot size – as in fact, that may not be possible, particularly if the existing house is much larger than what can be accommodated on the minimum lot area. Only the practical ability to create one or more additional lots is estimated which is why I explained previously that infill capacity ‘may’ achieve the

⁶ Appendix B – Rational Report.

⁷ I.e., gross PEC of approximately 3,560 dwellings, less approximately 70 existing dwellings, giving net PEC of approximately 3,490, with 80% take up equals 2,790.

⁸ I have not checked if these provisions are amended by PC19.

same net yield of a redevelopment pathway, as in reality it often won't (and will be less).

- 44 To illustrate this I have shown two properties in Cromwell in the proposed MRZ in Figure 3.

Figure 3 – Map of Two Brownfield Properties in the Proposed PC19 MRZ in Cromwell Township



- 45 Both sections are 1,012sqm in size and will therefore be classified as Brownfield – Large lot under the proposed MRZ (5x the minimum lot size). I have included the blue lines to indicatively show the size of the minimum lot size (if evenly split). Obviously, boundaries can be irregularly shaped so long as they are not less than the minimum.
- 46 Figure 3 shows that if the existing house on the left-hand section is to be retained (as I believe the Rationale model does), then the distance between the corner of the house and the boundary is not wide enough to legally provide for even 1 rear lot. However, the right-hand section would likely provide for up to two rear lots given the ample space between the house and the boundary.
- 47 Both sections are unlikely to provide sufficient room on the front yard for another section if we assume that the common access way is not able to be included in the minimum lot area. The distance of the new boundary from the existing house may also be an issue precluding subdivision in the front yard.

- 48 By my estimates, the left-hand section has zero infill capacity and redevelopment capacity (if one removed the existing house) of 4 net additional dwellings (gross PEC of 5 lots, less the one existing house that the section already supplied). The right-hand section is likely to have infill capacity of 2 dwellings, and redevelopment capacity of 4 net additional dwellings. Whether these are commercially feasible to develop now or in future years is not considered here.
- 49 It is my understanding that the Rationale model effectively assumes infill PEC of 4 net additional dwellings for each section. This is on the basis that the section has theoretical PEC of 5 dwellings under MRZ, less one existing dwelling. However, it is clear that the existing dwellings cannot be relegated to their own 200sqm lot. I believe that Rationale has reached these net PEC calculations because they have calculated capacity at the aggregate level⁹ and not the parcel level. If I am correct in this assumption, the model is likely to significantly overstate net PEC under an infill-based approach (and therefore feasible take up).
- 50 Conversely, if the Rationale approach *had* taken a redevelopment pathway for all sections, then the net PEC results would be accurate. However, this would then require the feasibility take up assumptions to be applied to gross PEC (i.e., the feasibility of demolishing the existing dwelling and redeveloping the whole site, with the count of existing dwellings subtracted at the end to indicate the net additional dwellings achieved from feasible redevelopment). The Rationale feasibility parameters have not been established or applied to work in this way.
- 51 Given that the yield assessment is heavily dependent on the feasible take up parameters, further detail is needed on what they are intended to show (and why).
- 52 **Feasibility.** Feasibility is a loaded term in capacity modelling due to the NPS-UD which requires assessment of commercially feasible development capacity. That is, dwellings that can be supplied while meeting a minimum profit threshold for a commercial developer.¹⁰ Under the NPS-UD guidance, feasibility modelling requires consideration of costs and revenues from residential development. For infill development, this would include consideration of any section purchase costs, development fees such as subdivision costs and council fees/charges and then construction costs and potentially sale related costs. For redevelopment, the cost of demolishing any

⁹ By dissolving and therefore ignoring all parcel boundaries and considering only the total count of existing dwellings, not how they appear on the ground.

¹⁰ While not all dwellings will be built by a developer, or someone that is motivated by profit, commercial feasibility is still relevant, particularly if banks are considering lending for the project.

existing buildings is also factored in, and the costs and revenue apply to all new dwellings on a site.

- 53 The Rationale yield assessment is not an assessment of development feasibility. There is no mention of current costs and sales prices, or cost and sale price increases over time in the report. There is also no mention of the typologies of dwellings expected on MRZ 200sqm lots for example (i.e., if these are standalone, duplex, or terrace houses) and how the costs and prices for these vary from the cost of development in the LRZ for example. There is no mention of sales price variation between different zones and townships.
- 54 To be clear, the Rationale report does not claim to have assessed commercial feasibility in a financial sense, but the use of the term 'feasible' is potentially misleading. For example, the Addendum Report concludes that "*changing the minimum lot sizes for the LDZ from 500sqm to 400sqm would have a material impact on the feasible capacity*". This is not an indication that developers would find 400sqm lots more profitable to deliver. This conclusion is simply driven by increased net PEC and applying the same target take up percentage (despite a substantial reduction in minimum lot size).
- 55 As discussed above, the feasible take up calculated in the Rationale model is simply an aspiration and the findings are very sensitive to these assumptions. This is particularly relevant when one considers that 200sqm is a density that has not been plan enabled in the Operative District Plan. There is no existing precedent on which to base the target. While 250sqm minimum lot size is enabled in reticulated areas of the Residential Resource Area, it is likely that relatively few sections were subdivided at that minimum (particularly in brownfield areas). For example, in the proposed MRZ in Cromwell, the average section size in the Brownfield – Small lot classification is currently sitting at 333sqm according to Rationale data.
- 56 It will take a real preference shift in the market to accept the typologies of dwellings available at 200sqm lot sizes. While this preference shift is not unrealistic over the long term, it is not likely to be supplied at high rates in the short term, and or even the medium term. Higher density dwellings in small provincial urban areas generally become more commercially feasible over time as the market adjusts to the new opportunities provided by rezoning (i.e., creates demand). It also takes time for small scale developers and the local construction sector to gain experience in those dwelling typologies. Large scale developers tend to have greater experience with attached dwelling typologies if they have worked in bigger districts/cities. As such, you are more likely to see nodes of higher density dwellings included in large scale site plans.

- 57 **Infrastructure Ready Capacity.** While the Rationale report talks about infrastructure requirements, this is essentially just the removal of non-developable area on greenfield sites that go to roads, standard landscape areas and any other non-developable areas as discussed above. This is a standard part of calculating PEC and should not be confused with infrastructure ready capacity.
- 58 The report does not consider if there is sufficient development infrastructure – particularly for the large greenfield or ‘other’ plan change areas. This includes network infrastructure (three waters, power, fibre, roading) and additional infrastructure (schooling, community facilities etc). This may or may not be relevant and depends on the residual capacity in current infrastructure to service growth, plus what is identified for funding in the LTP or scheduled in the long term infrastructure strategy (if taking an NPS-UD approach).
- 59 The s42A report indicates that some greenfield areas are not currently infrastructure ready. This includes the Golf Course which will not have waste water until after 2029, and the Cherry Orchard in Pisa Moorings which will not be serviced for water or waste water until after 2029. I understand from the S42A report that there may also be some infrastructure constraints in Bannockburn.
- 60 Accounting for infrastructure servicing is key to the way that development capacity is applied in the short (next 3 years), medium (4-10 years) and long terms (11-30 years).¹¹ A limitation of the Rationale yield assessment is that it does not have any temporal considerations and simply assumes that all feasible take up will be supplied evenly between 2019 and 2054. I consider that the absence of infrastructure readiness considerations overstates greenfield capacity especially in the short-medium term.
- 61 **Reasonable expected to be realised (RER) capacity.** This is a term I have taken from the NPS-UD guidance. It relates to the final step in the capacity assessment within an HBA. Once plan enabled, infrastructure ready and commercially feasible development capacity has been estimated in the short, medium and long term, practitioners are then required to make estimates of what share of that can reasonably be expected. It should not be confused with supply (as that will be driven by demand), rather it is an assessment of the reasonable opportunity for development.
- 62 There are a range of ways that RER capacity can be estimated, but it typically requires consultation with key landowners (particularly greenfield landowners) on their intentions to develop the land –

¹¹ These are NPS-UD standard time frames. As the Rationale model has retained a 2019 base year, and PC19 is only just coming up the hearing stage, 2024 may be the appropriate start year.

from both a timing perspective and a density perspective. RER capacity should also take into consideration data on the prevalence of infill and redevelopment in brownfield areas relative to greenfield development. It can also take into consideration consent trends for attached versus detached housing (particularly for short and medium term capacity assumptions).

- 63 In a way, given that the 'feasible capacity' in the report does not appear to be based on any financial analysis and is not an assessment of what dwellings would be profitable for a commercial developer to deliver at minimum lot sizes, the Rationale model is more akin to an RER assessment, but falls short of a robust assessment because:
- 63.1 RER must consider commercial feasibility (not actually assessed).
 - 63.2 RER must also consider what feasible capacity is infrastructure served (not incorporated).
 - 63.3 RER must consider supply patterns and landowner intentions.
- 64 While noting that the Addendum removes the capacity of Parkburn Quarry (PC21) and the Cherry Orchard from the sufficiency results, they are incorporated in the main report by Rationale. There is no evidence that these other plan change landowners have been consulted. I note that the Parkburn [masterplan](#) seeks to deliver around 543 dwellings at a range of densities in a highly landscaped environment.¹² The Rationale model estimates 1,108 additional dwelling capacity on that site – more than double the landowner intention – significantly overstating the long term capacity of Pisa Moorings.
- 65 Greenfield development areas typically have a lag between zoning approval and dwelling construction (and completion). It takes time for subdivision consents, earthworks, onsite infrastructure development etc. Large scale development are typically staged. Assuming that a portion of greenfield capacity is going to be 'taken up' in year 1 in the model (i.e. 2020) is inappropriate and another limitation of the model.
- 66 The Golf Course in Cromwell is leased land, and that lease does not expire in the next 10 years according to the S42A report (paragraph 213). Aside from the infrastructure constraints for this land discussed above, the lease alone should have been factored into the yield assessment – pushing its capacity out into the long term.

¹² Source: page 16 of PC21 Masterplan:

- 67 Existing consents is another factor normally taken into account during robust assessments or RER capacity. Wooing Tree Estate is shown in Figure 4 (yellow circle). It is not known how this land was treated in the Rationale yield assessment. I.e., if the whole site was treated as greenfield in the base data, or a mixture of greenfield and brownfield parcels. It is also not known if the building restriction area was taken into account. Ultimately, this land is progressing rapidly under consent, and the intended yield is likely to be much lower than the yield calculated at a minimum lot size 200sqm and up to 60% feasible take up. Especially when non-residential development areas are factored in. It is possible that there are other consents being given effect to in Cromwell Ward that may substantially lessen the additional capacity assumed to be provided by PC19.

Figure 4 – Selected MRZ Sites for Further Consideration - Cromwell



- 68 Another example of where the Rationale model is likely to have overstated capacity in the MRZ in Cromwell is the greenfield site east of the town centre.¹³ This site is highlighted with dashed lines in Figure 4. It is not clear whether Rationale have appropriately recognised the existing commercial development of this site and reduced the potential take up of MRZ yield accordingly. Assumptions (final yield) applied to the relatively new Golden View Retirement Village rezoned by PC19 (shown in blue) in Figure 4 would also be of interest to investigate further in the Rationale model.

¹³ Submitter #125

- 69 **Brownfield – Small lots additional capacity.** As noted previously, the Rationale report states that Brownfield – Small lot parcels are “*Sections smaller than 2x the minimum lot size – these sections are unable to be individually subdivided*”. If this is the case, then they cannot yield any additional dwellings through either infill or redevelopment. Yet, the model sets out assumptions for this classification, including take up assumptions for plan enabled capacity.
- 70 Based on my estimates, the model indicates total (gross) plan enabled capacity on Brownfield Small Lots of 3,136 dwellings, and net PEC of 677 dwellings once 2,459 existing dwellings are subtracted. 71% of that net PEC is in the PC19 LDZ extent.
- 71 While the feasible uptake of this net PEC is only around 32 additional dwellings (5% of net PEC) based on my replication of the model, this seems like 32 dwellings that shouldn’t be able to be created. In other words, if the description of this class of sections is correct, PEC should equal existing dwellings/lots. While I wondered if vacant small lots could somehow account for this net PEC, I do not believe that there could have been 677 vacant sections in the PC19 extent back in 2019 (or at any time in Cromwell Ward’s history). I’ve also wondered if it could be a result of a comparison of current parcel boundaries classified as Brownfield – Small lot compared with 2019 dwellings. While this seems more plausible, it makes no sense that only 5% of those would be taken by 2054 (when in fact most of those recently created sections would likely now be built on). That theory is therefore discounted. I am left to conclude that the fact that the model generates this net PEC of 677 additional dwellings on un-subdividable sections is a result of Rationale aggregating all the sections together. This takes the small area of each section above the minimum lot size and combines it to suggest that additional sections could be created. As discussed above, this is a significant limitation in the model (to disregard existing boundaries and individual ownership) and assume amalgamation of properties. This is an area where further information is needed, including on whether the 5% up take rate was somehow related to the number of adjoining sections within this class.

CONCLUSION

- 72 This review has identified a number of potential issues/limitations with the Cromwell Yield Assessment they are likely to have a compounding effect on the reliability of the conclusions of net additional dwelling capacity and sufficiency of PC19 and other private plan changes.
- 73 These potential concerns relate to:

- 73.1 The robustness of the process around identifying land that is capable of residential development.
 - 73.2 The methodology applied to infill PEC, and in particular, the treatment of existing boundaries and dwellings.
 - 73.3 The lack of commercial feasibility analysis.
 - 73.4 The apparent absence of redevelopment capacity modelling - noting that on some sites infill will be more commercially feasible and on other sites redevelopment will be more commercially feasible – hence the importance of calculating and evaluating both at a parcel level.
 - 73.5 The lack of temporal considerations for net additional capacity, including the impacts of development infrastructure (especially three waters) and greenfield development timing.
 - 73.6 The lack of a robust assessment of RER capacity, including the validity of take up assumptions and achievable densities, consideration of greenfield landowner intentions, consideration of consented developments and lease arrangements.
- 74 Many of these potential issues are not able to be further verified (or discounted) without further detail provided by Rationale. This would ideally be the next step in the review process. This could include (as a start) maps showing the land areas classified to the three section types, and (if relevant) parcel level capacity outputs.
- 75 Overall, though, based on the information currently available, I consider that there is a potential risk that the capacity of PC19 in the short-medium term especially has been overstated. The capacity estimated by Rationale is strongly weighted to greenfield development capacity (which is intuitively right), but at the same time, the assumptions applied for greenfield capacity are among those of strongest concern in my review.

Dated: 1 June 2023



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