Before the Independent Commissioner
Appointed by the Selwyn District Council

Under	the Resource Management Act 1991
In the matter of	a hearing on Plan Change 79 to the Operative Selwyn District Plan
	Birchs Village Limited
	Applicant

Statement of Evidence of Fraser James Colegrave

17 April 2023

Applicant's solicitors:

Alex Booker | Samantha Gardner

Anderson Lloyd

Level 3, 70 Gloucester Street, Christchurch 8013

PO Box 13831, Armagh, Christchurch 8141

DX Box WX10009

p + 64 3 379 0037 | f + 64 3 379 0039
alex.booker@al.nz

anderson lloyd.

Qualifications and Experience

1 My full name is Fraser James Colegrave. I am an economist and the managing director of Insight Economics, an economics consultancy based in Auckland. Prior to that, I was a founding director of another consultancy, Covec Limited, for 12 years.

2 I hold a Bachelor of Commerce (1st Class Honours) in Economics from the University of Auckland.

3 I have 25 years' commercial experience, the last 23 of which I have worked as an economics consultant. During that time, I have successfully led and completed more than 600 consulting projects across a broad range of sectors.

4 My main fields of expertise are land-use and property development. I have worked extensively in these areas for dozens of the largest developers in New Zealand. In addition, I regularly advise Local and Central Government on a range of associated policy matters.

5 Over the last 15 years, I have worked on numerous land use and development projects across Greater Christchurch, including several in the Selwyn District. For example, over the last 18 months, I have assessed the economic effects of 11 private plan changes in Selwyn (PPCs 67, 68, 69, 72, 73, 74, 75, 77, 79, 81 & 82).

6 I regularly appear as an expert witness before Councils, Boards of Inquiry, Independent Hearing Panels, the Land Valuation Tribunal, the Environmental Protection Agency, the Environment Court, the Family Court, and the High Court of New Zealand.

Code of Conduct for Expert Witnesses

7 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 Part 9 of the Environment Court Practice Note 2023. I have complied with it in preparing my evidence. I confirm that the issues addressed in this statement of 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 the opinions expressed.

Scope of evidence

8 I have previously provided various economic assessments for PC79, the latest being a brief of evidence dated 5 August 2022 on the proposed Selwyn District Plan for Birchs Village Limited (**BVL**).

9 The purpose of this evidence is to:

(a) Recap the key findings of my most recent evidence;

(b) Summarise any new or updated data since August 2022;

(c) Assess the proposal against clause 3.6 of the National Policy Statement for Highly Productive Land (**NPS HPL**); and

(d) Respond to the section 42A report.

EXECUTIVE SUMMARY

10 This statement begins by summarising my PC79 evidence from August 2022 and commenting on new information released since then, including new population projections that signal even higher district population growth than before.

11 Next, I provide a detailed critique of the Council's new capacity for growth model – the Selwyn Capacity for Growth Model 2022 (**SCGM22**). I show that this model is an unreliable and inappropriate basis for decision making because:

(a) It is an unaudited "blackbox" that has not been peer reviewed, whose outputs reveal many serious issues, and whose inputs largely remain a mystery;

(b) The model miscalculates infill capacity by failing to properly account for the size, shape, value, and location of existing dwellings, sheds, driveways, swimming pools, second dwellings, and so on;

(c) It overstates the capacity of greenfield areas, including plan change areas whose consented or planned yields are publicly documented and well-known to stakeholders;

(d) It includes capacity outside the urban environment. In fact, about 20% of the model's estimated short-medium term capacity resides outside the Greater Christchurch urban environment;

(e) The SCGM22 fails to assess capacity sufficiency across different price bands and instead adopts a very coarse and opaque view of the need for additional capacity like PC79;

(f) The model does not reflect the realities of development, which has been exacerbated by an absence of any recent sector input;

(g) It fails to account for the very long lead times associated with large greenfield developments and instead assumes that their capacities will be fully realised during the next 10 years;

(h) It incorrectly identifies capacity on parcels that are unavailable for development, such as Council vested reserves; and

(i) The model treats all sources of capacity as the same and only assesses sufficiency in aggregate terms. Consequently, it fails to properly appraise the need for additional capacity within each submarket.

12 Next, I assess PC79 against the relevant provisions of the NPS HPL and show that its meets them because:

(a) PC79 is required to provide short-medium term capacity for Prebbleton, with an estimated shortfall of 255 to 569 dwellings over that period; and

(b) There are no other reasonably practicable and feasible options for providing at least sufficient development capacity within Prebbleton while achieving a well-functioning urban environment; and

(c) The economic benefits of PC79 outweigh the long-term economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.

13 Finally, I record my disagreement with the section 42A report, which concludes – based on the SCMG22 – that PC79 is not required to provide short-medium term capacity to meet demand under the National Policy Statement on Urban Development 2020 (**NPSUD**).

14 Overall, I continue to support PC79 on economic grounds and see no reason to deny it on that basis.

SUMMARY OF PREVIOUS EVIDENCE

15 My evidence provided a detailed critique of the Selwyn District Council's (**SDC**) latest housing capacity assessment, as required under the NPSUD.

16 It concluded that SDC is not meeting its NPSUD obligations to provide at least sufficient capacity at all times.

17 This is because both SDC's estimates of demand for additional dwellings were inordinately low, whilst its estimates of likely capacity to meet that demand appeared overstated.

18 When the various issues identified in my previous evidence are addressed to provide more reliable estimates of dwelling supply/demand, the district clearly faces significant supply shortfalls across all NPSUD timeframes. Accordingly, additional land needs to be identified and rezoned as soon as possible to meet NPSUD obligations, and to enable the efficient operation of the land market.

19 Having concluded that the district faces significant, looming shortfalls in dwelling capacity (relative to likely demand), I then assessed the likely economic costs and benefits of the proposal.

20 Overall, I considered that the proposal will provide strong and enduring economic benefits. These include:

(a) Providing a substantial, direct boost in market supply to meet current and projected future shortfalls;

(b) Bolstering land market competition, which helps deliver new sections to the market quicker and at better average prices;

(c) Providing a variety of housing options/typologies to meet diverse needs and preferences;

(d) Contributing to achieving critical mass to support greater local retail/service provision; and

(e) The one-off economic stimulus associated with developing the land and constructing the dwellings that will be enabled there.

21 Given the significant benefits of the proposed rezoning, and noting the absence of any material economic costs, I strongly supported it on economic grounds. This conclusion remains the same after considering the updated information below.

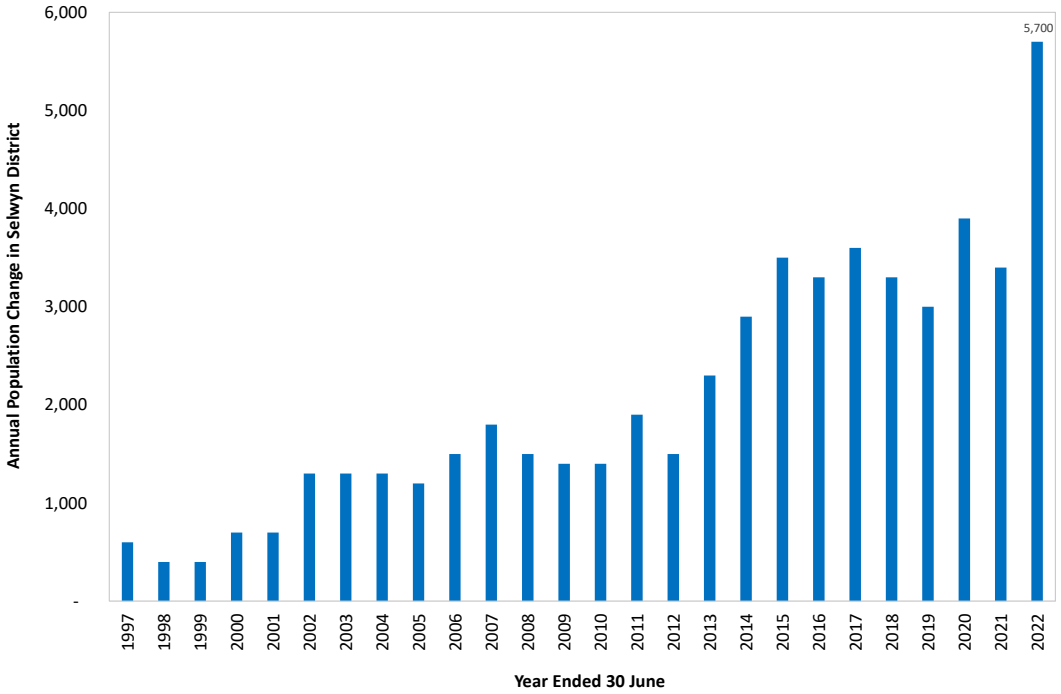
NEW POPULATION PROJECTIONS

22 My previous evidence reported that Selwyn is New Zealand's fastest growing territorial authority, and that this was expected to continue under all three of Statistics New Zealand's official population projections.

23 Two new sets of data have now become available, both of which signal even higher future growth than previously expected.

24 The first is Selwyn's official population estimate for 30 June 2022. This far exceeded expectations, with the population growing by 5,700 people in one year. The figure below puts this in context of past growth. Clearly, momentum is very strong.

Figure 1: Annual Changes in District Population (Year Ended 30 June)



25 In addition to – or because of – the new population estimates, updated district population projections have recently become available. Ordinarily, there is a three to five-year gap between the release of sub-national population projections, but the 2021 projections were unexpectedly updated in late 2022.

26 Interestingly, while the expected population growth rates in many of our largest cities were revised down, those for Selwyn and a handful of other high growth areas were revised upwards. Consequently, the official population projections for Selwyn now signal even higher growth than in my previous evidence. This is shown in the table below, which compares the projected compound annual growth rates (**CAGR**) for each Tier 1 or 2 Council in the 2021 and 2022 projection releases under the medium growth scenario.

Table 1: Changes in Growth Rates for Medium Projection Scenario (2021 vs 2022 releases)

Area	**2021** Medium Scenario CAGR	**2022** Medium Scenario CAGR	**Difference**
Selwyn district	1.75%	2.20%	0.45%
Waikato district	1.37%	1.74%	0.37%
Western Bay of Plenty district	0.82%	1.11%	0.30%
Tasman district	0.57%	0.76%	0.19%
Waimakariri district	1.02%	1.15%	0.14%
Tauranga city	1.13%	1.26%	0.13%
Hastings district	0.68%	0.76%	0.08%
Whangarei district	0.79%	0.87%	0.08%
Queenstown-Lakes district	1.57%	1.65%	0.07%
Napier city	0.39%	0.45%	0.06%
Hamilton city	1.14%	1.19%	0.06%
Lower Hutt city	0.40%	0.44%	0.04%
Upper Hutt city	0.58%	0.60%	0.02%
New Plymouth district	0.56%	0.56%	0.00%
Waipa district	0.84%	0.82%	-0.02%
Kapiti Coast district	0.45%	0.40%	-0.05%
Nelson city	0.34%	0.29%	-0.05%
Palmerston North city	0.49%	0.43%	-0.06%
Porirua city	0.65%	0.59%	-0.06%
Dunedin city	0.25%	0.16%	-0.10%
Rotorua district	0.42%	0.31%	-0.10%
Christchurch city	0.63%	0.52%	-0.12%
Wellington city	0.54%	0.39%	-0.15%
Auckland	1.11%	0.82%	-0.29%

27 The upshot is that the SDC must plan for even greater population and dwelling growth than before.

SELWYN CAPACITY FOR GROWTH MODEL 2022 (SCGM22)

Introduction

28 Like all high growth areas, Selwyn must continually monitor the supply of residential land (under the NPSUD) to ensure that enough is being provided in the right places, at the right time, to keep pace with demand.

29 Recently, SDC released two high level reports relating to its latest Capacity for Growth Model (SCGM22), which builds on prior versions to capture the impacts of:

(a) Recently operative plan changes;

(b) Proposed rezonings under the Proposed Selwyn District Plan; and

(c) MDRS provisions in Rolleston, Lincoln, and Prebbleton.

30 The revised model estimates demand for 420 additional dwellings in Prebbleton over the short-medium versus feasible capacity of almost 1,580 dwellings.

Consequently, it concludes, no extra capacity is needed in Prebbleton for the foreseeable future.

31 As explained below, there are several reasons why I place very little (if any) weight on these new data and the conclusions drawn therefrom.

SCGM22 is a Blackbox Model based on Out-of-Date Information

32 As the fastest growing district in New Zealand, Selwyn needs at least 30,000 new homes over the next 30 years. Based on current prices, this represents about $24 billion of future investment. To ensure that this investment is directed to the right places in the right ways at the right time, planning decisions must incorporate the best possible information.

33 In my view, the SCGM22 falls well short of this standard, and instead is effectively an unaudited blackbox model:

(a) that has not been independently peer reviewed;

(b) whose outputs appear to reveal many errors, and

(c) whose input data (mostly) remains a mystery.

34 Not only that, but the model's input data is now out of date. Specifically, according to one of its reports, the SCGM22 assessment was completed in June 2022. Factoring in the time taken to complete the underlying analysis, the model's input data would now be about a year old. However, the economics of property development have changed profoundly since then, which invalidates the assumptions upon which the SCGM22 is based.

35 First, the median dwelling price in Selwyn has dropped from nearly $910,000 in March 2022 to only $780,000 by the end of 2022 (a drop of 14% in only 9 months). At the same time, construction costs have skyrocketed due to supply chain squeezes coupled with prolonged labour shortages. Consequently, residential construction costs increased by nearly 14% in 2022.

36 Together, these lower sales prices and higher construction costs erode the financial viability of development. This is demonstrated in the table below, which shows how development margins vary with changes in prices and costs. It is based on a hypothetical project that would have earned a 25% profit margin in early 2022 (to align with the likely date of the SCGM22's input data).

Table 2: Impacts of Cost and Price Changes on Developer Margins

Cost Increase	Sales Price Decrease from early 2022							
	0%	**-2%**	**-4%**	**-6%**	**-8%**	**-10%**	**-12%**	**-14%**
0%	25%	23%	20%	18%	15%	13%	10%	8%
2%	23%	21%	18%	16%	13%	11%	8%	6%
4%	22%	19%	17%	14%	11%	9%	6%	4%
6%	20%	17%	15%	12%	10%	7%	4%	2%
8%	18%	16%	13%	10%	8%	5%	2%	-1%
10%	17%	14%	11%	8%	6%	3%	0%	-3%
12%	15%	12%	9%	6%	3%	1%	-2%	-5%
14%	13%	10%	7%	4%	1%	-2%	-5%	-7%

37 In short, a project that would have earned a 25% margin in early 2022 would now likely make a loss. This is shown in the bottom-right cell of the table above, which reflects the impacts of a 14% decrease in sales prices, plus the 14% increase in construction costs, which both occurred in 2022.

38 Given the sensitivity of financial viability to these recent, unprecedent changes in prices and costs, the SCGM22's capacity estimates are out-of-date and cannot be relied on.

SCGM22 Miscalculates Infill Potential

39 Another issue with the SCGM22 is that it overstates infill capacity because it fails to properly account for the size, shape, value, and location of existing dwellings, sheds, driveways, swimming pools, second dwellings, and so on.

40 In my recent evidence for PC74 to the Operative Selwyn District Plan, I used the example of 27 Rossington Drive (West Melton), to explain this issue.

41 In his summary statement for the now-vacated PC74 ODP hearing, SDC's economist, Mr Foy, admitted that the SCGM22 was wrong for 27 Rossington Drive. However, he suggested it was just an anomaly; not a sign of a bigger issue.

42 To delve deeper, I crosschecked the model's infill capacity estimates for all properties on Rossington Drive, not just for number 27 as per my evidence for PC74.

43 I found that the same error has been made for 20 properties on Rossington Drive[1] (which were supposed to provide 29 new dwellings in the next 10 years), so the example in my PC74 evidence was not just an anomaly.

44 Consequently, the SCGM22's estimates of infill capacity are also unreliable.

[1] Namely 1, 7, 9, 11, 17, 23, 25, 27, 29, 30, 34, 38, 40, 46, 52, 54, 56, 86, 88, and 92 Rossington Drive.

SCGM22 Overstates the Capacity of Several Large Sites

45 Not only does the model materially overstate infill capacity, but it also appears to overestimate the capacity of several large greenfield areas.

46 For example, according to the SCGM22, the three largest sites in Rolleston have capacity for 2,830 new dwellings over the next 10 years, based on almost 170 hectares of developable land.

47 However, several sources[2] confirm that these sites span only 48 hectares. As a result, the model overstates their capacity by about 2,000 dwellings because it overstates their land area by a factor of about 3.5.

48 A similar issue was detected in West Melton, where the model assumed that PC67 would provide 359 dwellings, despite a consented yield of only 179, while also overstating the planned and publicised yields of PC74 and PC77. The table below elaborates.

Table 3: SCGM22 Capacity Estimates vs Actual for PCs 67/74/77

Plan Change	SCGM22	Actual	Variance
PC67	359	179	-180
PC74	222	124	-98
PC77	410	220	-190
Total	**991**	**523**	**-468**

49 While I have not had time to reconcile SCGM22's estimates with all other plan changes across the district, these three examples alone cast serious doubt over the model's assessment of greenfield capacity.

SCGM22 Includes Capacity Outside the Urban Environment

50 As its name suggest, the NPS-UD relates only to capacity within urban environments (in this case, the greater Christchurch urban environment). Despite that, the SCGM22 appears to include significant capacity in rural areas.

51 This is demonstrated in the table below, which splits the model's estimates of feasible medium-term capacity into areas inside the urban environment, and those outside. In short, the model includes nearly 3,750 dwellings outside the urban area.

[2] Including property guru, LINZ, and GRIP.

Table 4: Medium Term Capacity Inside/Outside Urban Environment

In Greater Christchurch	Medium-Term Capacity
Rolleston	6,552
Lincoln	3,664
Prebbleton	1,579
West Melton	702
Tai Tapu	3
Sub-total	**12,500**
Outside Greater Christchurch	**Medium-Term Capacity**
Darfield	2,273
Leeston	789
Coalgate	226
Southbridge	159
Kirwee	136
Castle Hill	49
Dunsandel	43
Doyleston	39
Springfield	35
Sub-total	**3,749**
District Total	**16,249**

SCGM22 Fails to test Sufficiency Across Different Price Bands

52 A key objective of the NPSUD is to ensure that more competitively priced (i.e. affordable) housing becomes available over time. To ensure this, the sufficiency of estimated capacity is often examined in terms of different price bands. The SCGM22, conversely, does not test sufficiency by price band and instead only takes a coarse view of sufficiency at the township level. That said, the SCGM22 does helpfully delineate Prebbleton as its own locality and market, which I adopt for my assessment against the NPS HPL later in this evidence.

53 These price-based sufficiency tests are critical not only from an affordability perspective, but also for sense checking the model's results. This is because models like the SCGM22 often (errantly) conclude that there is sufficient capacity overall even when there are major shortfalls across price bands.

54 For example, the table below disaggregates estimated demand and capacity by price band for Te Awamutu, in the Waipa district, based on a model that is very similar to – if not the same as – the SCGM22[3]. It shows that there are major shortfalls in all but one price band despite capacity being sufficient overall.

[3] Specifically, the growth capacity modelling for Waipa was undertaken by Market Economics, whose model appears to be the same as – if not the fundamental basis of – the SCGM22.

55 I suspect that the same issue applies in Selwyn, but I cannot test my theory because the necessary data has not been provided despite several requests to SDC.

Table 5: Te Awamutu Sufficiency by Price Band (from an SCGM-type model)

	DEMAND			CAPACITY (RER)					SUFFICIENCY	
Dwelling Value Band	Existing Households	2050 Demand	2050 Demand (with margin)	Existing Estate	Existing Urban Area	Greenfield	Additional Future Potential	Total Potential Future Estate	Net Difference to Demand	% of Demand
Up to $200k	100	200	200	100	-	-	-	100	-60	64%
$200k to $300k	100	200	200	100	-	-	-	100	-60	64%
$300k to $400k	1,000	1,500	1,600	1,000	-	-	-	1,000	-600	64%
$400k to $500k	2,100	3,100	3,200	2,100	-	-	-	2,100	-1,200	64%
$500k to $600k	1,400	2,100	2,200	1,400	200	30	200	1,600	-600	73%
$600k to $700k	700	1,000	1,100	700	200	3,400	3,600	4,300	3,200	394%
$700k to $800k	300	400	500	300	-	-	-	300	-200	64%
$800k to $900k	100	200	200	100	-	-	-	100	-70	64%
$900k to $1m	30	50	50	30	-	-	-	30	-20	64%
$1m+	70	100	100	70	-	-	-	70	-40	64%
TOTAL	**5,900**	**8,800**	**9,200**	**5,900**	**400**	**3,400**	**3,800**	**9,700**	**500**	**105%**

SCGM22 Does Not Reflect Realities of Development

56 Land development and house construction are complex, interrelated processes that require coordinated input from various stakeholders at multiple organisations.[4]

57 Because such deep complexity is impossible to capture in basic simulation models, like the SCGM22, their development and operation must be closely informed by sector participants to ensure that they reflect market realities.[5]

58 However, the SCGM22 incorporates no recent input from any of the 11 plan change proponents that I have provided expert economic evidence in support of, which raises issues about whether it properly reflects market conditions "on the ground."

59 A good example is the very low profit margin assumed by the SCGM22 for building development. Official guidance recommends a default value of 20% for this unless otherwise confirmed by the local development community. However, the SCGM22 adopts an inordinately low value of 7% because it confuses company net profit after tax (NPAT) with developer margins, which are entirely different metrics.

60 I am not aware of any developer that would risk millions of dollars to earn a potential profit margin of only 7%, nor am I aware of any financier that would lend capital on such a basis. Once overhead costs are backed out of the equation, the business would be operating at a significant loss.

[4] For example, the land development process requires coordinated input from lawyers, accountants, developers, engineers, planners, surveyors, civil works contractors, utility providers, territorial authorities, iwi, and affected parties (to name but a few).

[5] For example, developers and landowners will be aware of site-specific constraints – such as convenants or contamination – that will elude even the most sophisticated desktop analysis.

61 The upshot of assuming such a thin profit margin is that the SCMG22 artificially lowers the financial hurdle for hypothetical financial feasibility and therefore overstates the quantum of feasible capacity in the district.

62 At the same time, the SCGM22 does not appear to adequately incorporate the views of valuers, real estate agents, and other property professionals about the demand for different types and sizes of dwellings. As a result, it assumes a voracious appetite for much smaller sections sizes than have previously been provided in key townships.

SCGM22 Fails to Account for Very Long Lead Times

63 Another shortcoming of the SCGM22 is that it seems to assume that the full capacity of large, new greenfield areas will be fully realised in the next 10 years despite most (if not all) only just becoming operative.

64 For example, it assumes that PC68 will provide 770 new dwellings in Prebbleton over the next 10 years, with PC69 providing more than 2,000 dwellings in Lincoln.

65 While some plan change areas may be developed that quickly, others may not. There are several reasons why large developments can take time to complete. They include:

(a) Fragmented ownership and the inherent difficulties of agreeing a coherent and unified plan that meets (often-conflicting) goals and aspirations while also being a financially viable development outcome.;

(b) The very long lead times for finalising the masterplan, securing finance, applying for and obtaining earthworks consents, undertaking civil works, subdividing land, gaining new titles, selling lots, and so on;

(c) Developer capability and intentions;

(d) Minimisation of tax obligations on “planning gains”;

(e) Financial and operational constraints; and

(f) Intentional regulation of supply to avoid flooding the market and therefore maintain section prices at more profitable levels.

66 The SCGM22 overlooks these factors and instead assumes that the full capacity of greenfield areas will be converted to occupied dwellings in the next 10 years.

SCGM22 Estimates Capacity on Undevelopable Land

67 Prior versions of the SCGM22 errantly estimated residential development capacity on land that cannot be used for such purposes, including Council reserves. While some of these instances may have been resolved, the problem remains.

68 For instance, the table below shows the address and estimated medium term capacity for seven Prebbleton parcels that were vested for reserve purposes. Not only does this further overstate district development capacity, but it also seriously erodes any confidence in the model and its calculations.

Table 6: Prebbleton Vested Reserves with Estimated Medium-Term Capacity

Address	Land Area m^2	Medium Term Capacity
48 Stonebridge Way	966	3
21 Glenwood Drive	632	2
600 Trents Road	2,068	4
1 Hampstead Lane	909	2
1 Guilder Drive	1,345	1
30 Farthing Drive	1,728	2
9 Alan James Lane	5,396	4
Total	**13,044**	**18**

69 This problem is not limited to just Prebbleton, either, with significant capacity incorrectly estimated on reserve land elsewhere across the district. In fact, a cursory review indicates that more than 200 lots of medium-term capacity are on reserve land or parcels used for other purposes, such as education.

SCGM22 Treats All Capacity Sources as Identical

70 Finally, when reconciling demand with capacity in each part of the district, the SCGM22 effectively treats all sources of capacity as perfectly substitutable.

71 For example, it groups capacity from the Summerset Retirement Village in Prebbleton with all other sources of capacity in that location despite the retirement village clearly catering for a specific subsegment.

72 By failing to account for these important differences and only assessing sufficiency in aggregate terms, the model fails to properly appraise the need for additional capacity within each submarket.

Summary and Conclusion

73 The Council's latest supply and demand estimates for Prebbleton are based on a model which appears inaccurate, and whose outputs reveal many compounding errors. Accordingly, I have no confidence in the conclusions reached about the need for additional capacity in Prebbleton over the short-medium term.

THE NATIONAL POLICY STATEMENT FOR HIGHLY PRODUCTIVE LAND

Introduction

74 The National Policy Statement for Highly Productive Land **(NPS HPL**) came into force on 17 October 2022 and aims to protect our most productive land for land-based production, both now and in the future. It requires Councils to map highly productive land (**HPL**), and closely manage the subdivision, use and development of it by avoiding inappropriate use and development.

75 Section 3.6(1) of the NPS HPL allows Tier 1 and 2 territorial authorities[6] to allow the rezoning of HPL if three criteria are met. They are that:

(a) the urban rezoning is required to provide sufficient development capacity to meet demand for housing or business land to give effect to the National Policy Statement on Urban Development 2020; and

(b) there are no other reasonably practicable and feasible options for providing at least sufficient development capacity within the same locality and market while achieving a well-functioning urban environment; and

(c) the environmental, social, cultural, and economic benefits of rezoning outweigh the long-term environmental, social, cultural, and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.

76 Below I consider these tests from an economic perspective to inform the broader analysis against the NPS HPL.

Need for Capacity under NPSUD – Clause 3.6(1)(a)

77 According to the SCGM22, Prebbleton has short-medium term capacity for 1,580 dwellings versus demand of only 420, giving an estimated surplus of 1,160 dwellings. I now work through each side of this equation to produce revised short-medium term supply and demand figures from which to consider the need for the proposal under the NPSUD.

Demand

78 Since 2021, when I first became involved with various Selwyn plan changes, SDC was planning for an additional 1,859 dwellings in Prebbleton and West Melton over the next 10 years (including NPSUD margins).

---

[6] Under the National Policy Statement on Urban Development (NPS-UD)

79 This equated to just over 20% of projected district demand, which broadly matched Prebbleton and West Melton's combined share of historic consent growth (of 18%) as per the table below (from Selwyn District Growth and Demand 2021)

Table 7: Demand Allocation by Township (2021 Selwyn District Growth and Demand)

Area	Consent Allocation	Strategic Allocation	Comment
Rolleston	44%	50%	Increase that reflects the ongoing strategic approach as developing Rolleston as the hub of the district.
Lincoln	18%	12%	Decrease that reflects the difficulty and/or cost involved in subdividing and developing the land.
Prebbleton	8%	8%	
West Melton	10%	5%	Decrease that reflects the reduction in available land.
Burnham	0%	0%	
GCP Rural	8%	8%	
Darfield	2%	5%	Increase as there is capacity and is a key town.
Leeston	2%	5%	Increase as longer term trend of retiring farmers, affordability and attractiveness.
Rural	8%	7%	Slight Decrease to reflect trend in Rural take-up.

80 While the "strategic allocation" for West Melton was reduced from its historic share to reflect land unavailability in the table above, Prebbleton's historic share of 8% was carried clearly forward as its future/strategic demand allocation.

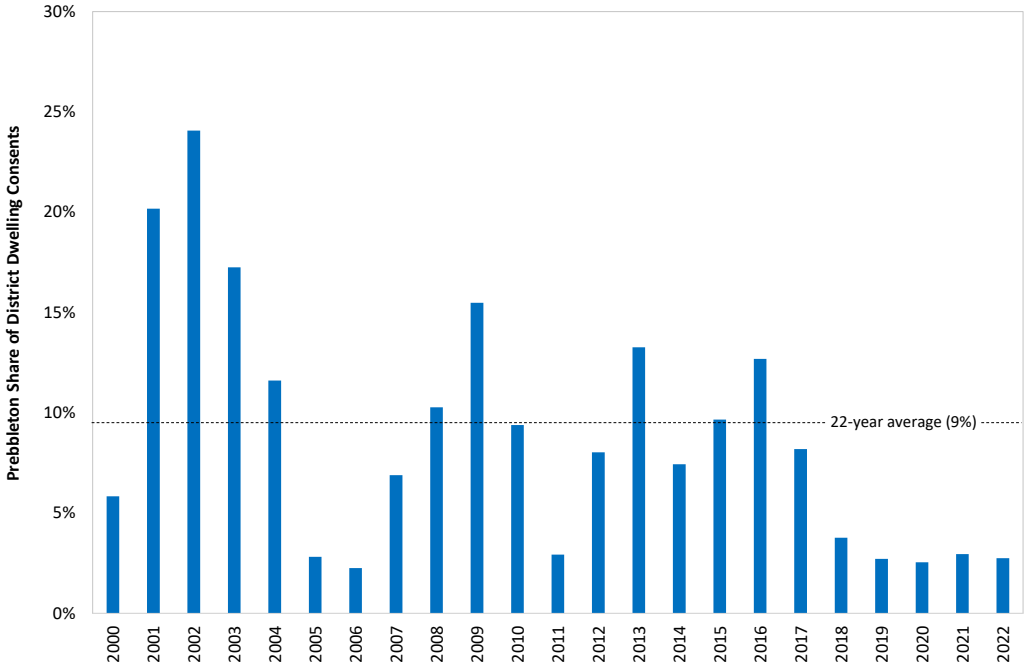
81 The SCGM22, however, allocates Prebbleton only 3% of short-medium term demand. This is illustrated in Table 8, where Rolleston and Lincoln's demand shares are higher than their corresponding strategic allocations, but Prebbleton's is notably lower.

Table 8: SCGM22 Short-Medium Demand Allocation

Townships	Short-Med Demand	Shares
Rolleston	6,980	56%
Lincoln	2,510	20%
Prebbleton	420	3%
Rest of district	2,600	21%
Total	**12,510**	**100%**

82 To better understand Prebbleton's inordinately low allocation as per the SCGM22, I used building consent data to calculate its share of new dwellings since 2000. The results are presented below, where the 22-year average is 9%.

Figure 2: Prebbleton Share of New Dwellings from 2000 to 2022



83 Although Prebbleton's share of growth tapered off recently due to a lack of available sections, it still accounted for 9% of new dwellings since 2000. On that basis alone, I find the SCGM22's allocation of 3% perplexing.

84 Further, given Prebbleton's status as the district's third largest township, its recognition as an urban environment under the NPSUD, and its highly strategic location adjacent to Christchurch city, I believe that it can and should be allocated a higher share of growth than it has sustained in the past.

85 Finally, I note that demand and supply do not operate independently, with greater supply typically creating higher demand, and vice versa. Indeed, this is why the "demand" for living in Prebbleton slowed down in recent times. i.e. because there was no supply to accommodate it.

86 Looking forward, with more than 1,000 new sections recently enabled at PC68 and PC72, I expect the boost in Prebbleton's supply of new sections to be met by a corresponding spike in demand, which will enable it to capture a larger share of growth than it has recently. This will be amplified by the potential rezoning of PC79.

87 Thus, on balance, I adopt a short-medium term demand share for Prebbleton equal to 10% to 12.5% of the district total, which translates to 1,255 to 1,569 additional dwellings over the next 10 years.

Supply

88 Consider, now the supply situation. To begin, table disaggregates the SCGM22's estimates of Prebbleton's short-medium term capacity by type/source.

Table 9: SCGM22 Estimate of Prebbleton Short-Medium Term Capacity

Capacity Type/Source	Feasible Capacity	Shares
Infill/Redevelopment	209	13%
PC68	770	49%
PC72	304	19%
Summerset RV	217	14%
Vacant Site	79	5%
Total	**1,579**	**100%**

89 According to Table 9, Prebbleton's short-medium term capacity is spread across several sources, with nearly 60% provided by PC68 and PC72. In addition, it includes 209 dwellings via infill or redevelopment of non-vacant sites in the existing urban area, plus 79 dwellings on vacant sites. Finally, Prebbleton's estimated short-term capacity includes 217 dwelling at the Summerset Retirement Village, which is under construction.

90 While I acknowledge that considerable capacity has been enabled in and around Prebbleton, I disagree that nearly 1,579 new dwellings could be built and occupied over the next 10 years, as the SCGM22 implies.

91 First, as noted above, the model is based on price and cost data that are no longer valid, so neither are its estimates of feasible capacity.

92 Second, as also previously noted, the SCGM22's estimates of infill/redevelopment are unreliable, so little (if any) weight should be placed on them.

93 Third, there is no guarantee that the full extent of PC68 and PC72 will be developed and occupied by new residents over the next 10 years. In fact, longer timeframes are highly likely given the large number of landowners at both sites, few (if any) of which appear to be experienced developers. Coupled with the difficulty of agreeing a unified way forward with so many competing interests, it should be clear that only a proportion of the enabled capacity in each location will translate to occupied dwellings over the next 10 years.

94 Fourth, I fundamentally disagree with grouping retirement village capacity together with all other sources, because such facilities cater for only a specific segment of the housing market.

95 In addition, retirement villages tend to attract people from broad geographic catchments, not just their immediate environments. Consequently, only a share of the new village's capacity will be absorbed by – and should therefore be allocated to – growth in Prebbleton.

96 To understand the likely future catchment for the new Summerset Retirement Village, it is useful to first note that the national average penetration rate is 14%,

which means that 14% of people aged 75 or older currently live in a retirement village.[7]

97 Further, according to Statistics New Zealand's latest official population estimates, there are only 220 people aged 75+ currently living in Prebbleton. Applying the 14% penetration rate to that cohort suggests that just over 30 may move into the new village. And, with a national average household size of 1.3 in retirement villages, they would tentatively occupy only 24 rooms (or 11% of the total).

98 Accordingly, I consider that only 20% of the village's capacity should be allocated to Prebbleton for the purposes of reconciling short-medium supply and demand.

99 To translate the SCGM22's capacity estimates into more realistic values for future supply, I applied scalars to reflect the issues identified above. These scalars capture the share of each source's capacity that I estimate will become supply (i.e. an occupied dwelling) over the next 10 years.

100 My workings are tabulated below, and indicate that Prebbleton's short-medium term supply is likely to be about 1,000 dwellings overall.

Table 10: Estimated Short-Medium Term Dwelling Supply in West Melton

Capacity Source	**Feasible Capacity** short-med term	**Scalar %** short-med term	**Likely Supply** short-med term
Infill/Redevelopment	209	20%	42
PC68	770	75%	578
PC72	304	90%	274
Summerset RV	217	20%	43
Vacant Site	79	80%	63
Total	**1,579**	**63%**	**1,000**

Reconciliation of Supply and Demand

101 My analysis above indicates a likely short-medium term demand for 1,255 to 1,569 extra dwellings in Prebbleton versus a likely future supply of 1,000, which leads to a shortage of 255 to 569 dwellings over that period.

102 Accordingly, I conclude that the district is not providing sufficient capacity to meet demand in the township, as per the NPSUD, with additional capacity like PC79 therefore required.

103 In addition, I conclude that PC79 represents a significant addition to Prebbleton supply for the purposes of clause 3.8 of the NPSUD because it will boost short-medium term supply by at least 50%. I consider that to be highly significant.

[7] Reference to JLL RV whitepaper 2021

104 Consequently, I conclude that the proposal meets clause 3.6(1)(a) of the NPS HPL.

No Other Practicable or Feasible Way to Provide Capacity – Clause 3.6(1)(b)

105 Having determined the need for the proposal, the next test is whether there are other reasonably practicable/feasible ways of providing the same capacity in the same market/locality while achieving a well-functioning urban environment.

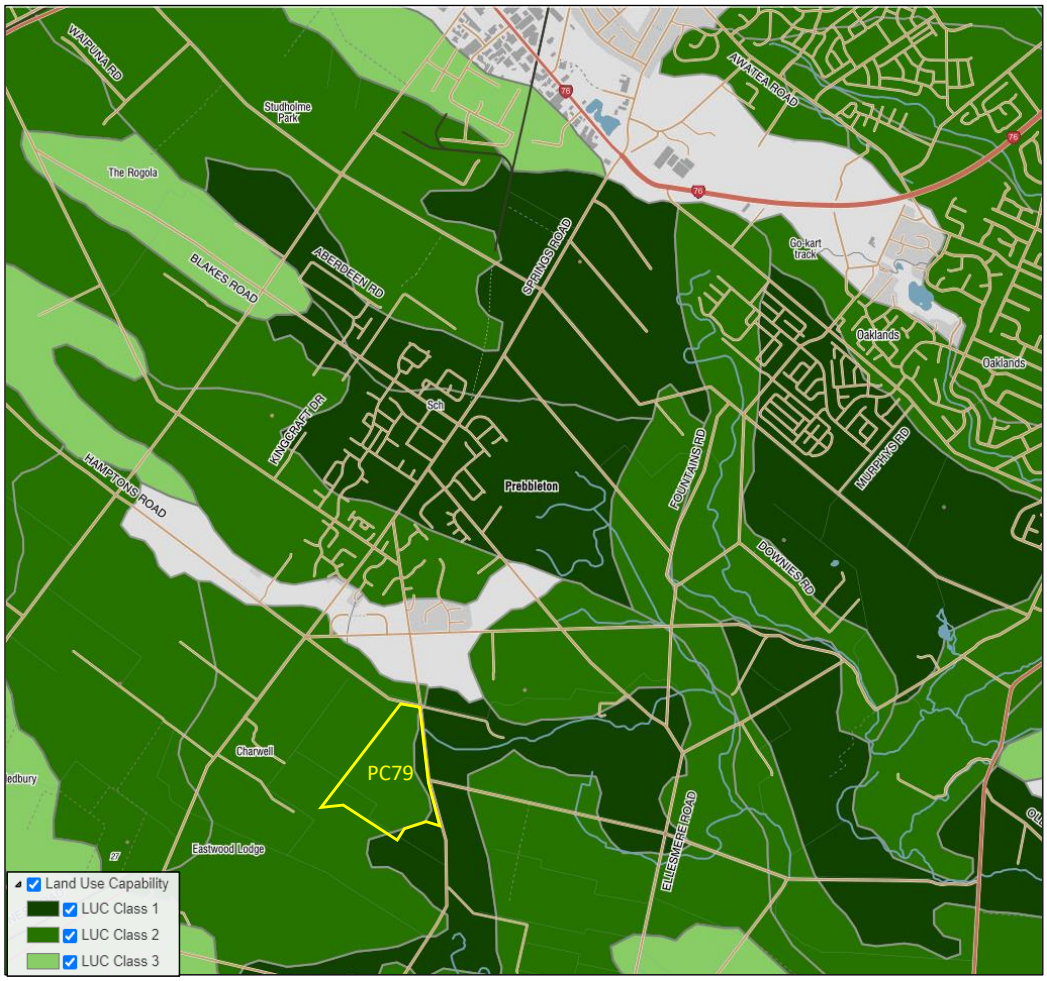
106 This includes via intensification of existing urban areas, rezoning of land that is not HPL, or rezoning land that has a relatively lower productive capacity. I start with intensification. First, however, I clarify that I adopt Prebbleton as the relevant market and locality for this exercise. Indeed, while Prebbleton was previously grouped with West Melton in Council reporting on supply and demand, the latest SCGM22 reporting splits Prebbleton out as its own market. I agree with that approach and rely on it here.

107 Having delineated the relevant market and locality, I next confirm that the proposed development enabled by PC79 cannot be achieved via intensification of the existing Prebbleton township because there are no sites large enough to accommodate it. In addition, amalgamation is far too complex and prohibitively expensive, while the presence of restrictive covenants across several Prebbleton subdivisions precludes them from future redevelopment or further intensification.

108 To identify other sites that have either a relatively lower productive capacity than PC79, or no HPL at all, I used Landcare's GIS viewer to examine the distribution of HPL in and around Prebbleton.[8] The map below presents the results, with the yellow outline identifying the PC79 site.

[8] https://ourenvironment.scinfo.org.nz/maps-and-tools/app/Land%20Capability/lri_luc_main/

Figure 3: Distribution of HPL in and Around Prebbleton



109 Figure 3 shows that virtually all land in and around Prebbleton contains HPL, with the subject site containing about 5 hectares of LUC1, and 31.6 hectares of LUC 2.[9]

110 In terms of sites without HPL, there is a strip of land straddling Hamptons Road that appears to contain no HPL (which is shaded light grey). However, a lot of that has already been rezoned via PC68. As a result, there is very little – if any – non-HPL land in and around Prebbleton for development (in lieu of the proposal) that is not already zoned for urban uses or in the process of seeking it.

111 The final consideration is whether the proposal could be duplicated on land with a lower productive capacity. This is defined in the NPS HPL to mean:

> *"the ability of the land to support land-based primary production over the long term, based on an assessment of:*
>
> (a) *physical characteristics (such as soil type, properties, and versatility); and*

[9] As per the evidence of Mr Mthamo.

(b) *legal constraints (such as consent notices, local authority covenants, and easements); and*

(c) *the size and shape of existing and proposed land parcels"*

112 Mr Mthamo's evidence covers this issue comprehensively from a soil productivity perspective, which I rely on here.

113 In addition, I note that the PC79 land is probably too expensive to be viable for rural production over the longer term. In fact, according to Core Logic's Property Guru tool, the median land value of Selwyn district properties used for arable/horticultural is $\$3.50/m^2$. The subject site's land value, conversely, is more than 20 times higher at $\$73/m^2$ (again, according to Property Guru).

114 This very high cost (compared to land used for productive purposes) undermines the viability of rural production because inordinately high profits must be achieved to provide an acceptable rate of return on the underlying land. This is not the case for the cheaper land where rural production currently occurs, which puts the subject site at a considerable – and likely insurmountable – competitive disadvantage.

115 To minimise production costs and ensure long-term viability, nearly all rural production occurs in relatively remote and thus cheap areas (with all the required consents). This is illustrated by the yellow dots in the map below, which reveal the location of the 540-odd parcels currently used for arable and horticultural purposes in Selwyn. The PC79 site is identified by a white arrow for context.

Figure 4: Location of District Land Used for Arable or Horticultural Purposes

116 For the reasons above, I do not consider that there are any other reasonably practicable or feasible options to provide the proposed capacity from an economic perspective.

Overall Economic Costs and Benefits – Clause 3.6(1)(c)

Introduction

117 The final task is to show that the overall benefits of the proposal outweigh costs, including all tangible and intangible effects. This is not limited to economic considerations, and also includes social, cultural, and environmental effects.

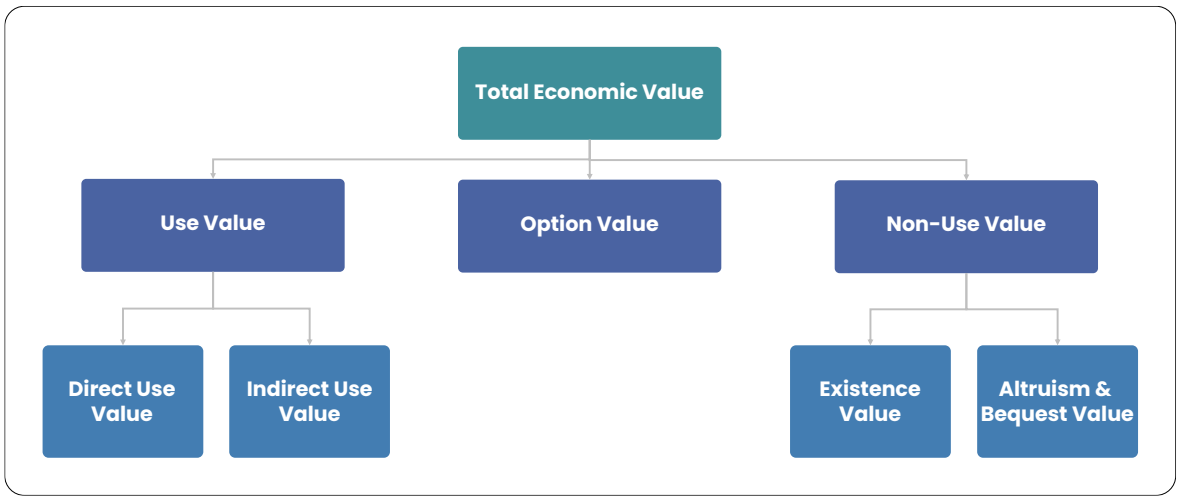
118 Below, I assess the likely *economic* costs and benefits of the proposal relative to potential rural production to inform the broader NPS HPL analysis. First, however, I summarise a literature review undertaken to help structure the analysis.

Literature Review

119 I briefly reviewed the New Zealand literature on the economic analysis of competing land uses and was quickly led to 2013 paper titled "Total Economic Value of New Zealand's land-based ecosystems and their services" (Patterson 2013)[10]. It is widely cited by other studies and appears to be the most authoritative, current work of its kind. Accordingly, I rely on it here.

120 The paper adopts the total economic value (**TEV**) framework, which has been widely used in environmental economics since the 1980s to help capture the full spectrum of economic effects, not just those that are readily quantifiable. While the exact structure of the TEV framework often differs from one study to the next, the figure below shows its key components.

Figure 5: Total Economic Value (TEV) Framework



121 In the TEV framework, economic value includes the use and non-use of resources, plus possible future use (known as option value).

122 Use values are then subdivided into those flowing directly from use, such as food production, and those flowing indirectly, such as changes in air or water quality due to farm practices.

123 Non-use values include the benefit people receive from knowing that something exists, even if they never plan to visit it (existence), plus the benefit of preserving things for the benefit of others both now (altruism), and in future (bequest).

[10] https://www.landcareresearch.co.nz/assets/Publications/Ecosystem-services-in-New-Zealand/3_2_Patterson.pdf

124 Patterson 2013 apply this framework to 12 land-based ecosystems to quantify the economic value that each provides. They split use values into the following four parts to reflect the delivery of different ecosystem services:

(a) Provisioning services – such as the growing of arable/horticultural crops, plus the rearing of animals for meat and/or milk production;

(b) Regulation services – which refers to the regulation of biophysical and ecological processes to support life and provide a suitable habitat for human existence;

(c) Cultural services – which includes spiritual fulfilment, aesthetics, education, scientific knowledge, and cultural wellbeing; and

(d) Support services – which support provisioning and regulating services nutrient cycling, soil formation, and the provision of habitat. However, these are usually excluded from the formal assessment of TEV because they are already included elsewhere and hence cause double-counting.

125 Table 11 summarises the TEV's estimated by Patterson 2013 via this approach.

Table 11: TEV of Land-Based Ecosystems from Patterson 2013

Ecosystem type	Use value				Passive value	Gross value[11]	Net value[12]
	Supporting value	Regulating value	Provisioning & cultural value	Total			
Standard ecosystems							
Horticulture & cropping	23	3	2,265	2,291	*Note 3*	2,291	2,268
Agriculture	7,751	3,345	9,075	20,171	*Note 3*	20,171	12,420
Intermediate agric-scrub	1,897	1,630	1,112	4,639	*Note 3*	4,639	2,742
Scrub	609	531	5	1,144	*Note 3*	1,144	535
Intermediate agric-forest	402	352	218	973	*Note 3*	973	571
Forest-scrub	704	614	129	1,447	*Note 3*	1,447	743
Forest	3,495	3,056	7,631	14,182	*Note 4*	14,182	10,687
Wetlands	3,599	4,103	1,020	8,722	350	9,072	5,473
Estuaries	1,026	314	109	1,449	211	1,659	634
Mangroves	0	103	0	103	41	144	144
Lakes	1,735	544	4,671	6,950	885	7,836	6,101
Rivers	1,289	404	3,470	5,164	1,434	6,597	5,309
Heritage ecosystems							
National parks	*Note 5*	*Note 5*	*Note 5*	*Note 5*	7,164	7,164	7,164
Forest parks	*Note 5*	*Note 5*	*Note 5*	*Note 5*	743	743	743
Land reserves	*Note 5*	*Note 5*	*Note 5*	*Note 5*	1,218	1,218	1,218
Total	**22,530**	**15,000**	**29,705**	**67,235**	**12,045**	**79,280**	**56,749**

[11] Gross value = use value + passive value

[12] Net value = use value + passive value − supporting value

126 I now use this framework to compare the likely economic costs and benefits of the proposal to potential rural production. I begin with the TEV of the proposal.

TEV of Proposal

127 The various tasks associated with preparing the land for development and then constructing approximately 530 new dwellings on it (plus supporting commercial activity) will have significant economic impacts over a prolonged period.

128 I quantified these using a technique called multiplier analysis, which enables the wider economic impacts of a change in one sector (or sectors) to be traced through to estimate the overall impacts on the economy.[13]

129 These impacts include:

(a) Direct effects – which capture onsite activities directly enabled by the proposal; plus

(b) Indirect effects – which arise when businesses working directly on the project source goods and services from their suppliers, who in turn may need to source good/services from their own suppliers.

130 These economic effects are usually measured in terms of:

(a) Contributions to value-added (or GDP). GDP measures the difference between a firm's outputs and the value of its inputs (excluding wages/salaries). It captures the value that a business adds to its inputs to produce its own outputs.

(b) The number of FTEs employed – which is measured in terms of full-time equivalent workers (FTEs).

(c) Total wages and salaries paid to workers, which are often labelled 'household incomes.'

131 I built a land development and construction model to capture likely project expenditures by stage, which were overlaid with economic multipliers to derive the proposal's likely one-off impacts on GDP, jobs, and wages.

[13] The multipliers are based on the latest (2020) national input output tables published by Stats NZ.

132 Based on other similar projects, I estimated that land development and preparation costs would be about $15m, with total construction costs of nearly $160m. The latter equals 530 dwellings at 150m^2 each costing $2,000/m^2 to build.

133 Land development is estimated to span roughly three years across several stages, with dwelling construction assumed to span approximately 10 years.

134 These input values and assumptions were fed into my economic model to estimate the one-off impacts tabulated below.

Table 12: One-Off Economic Impacts of the Proposed Development

Subdivision	**Direct**	**Indirect**	**Total**
FTEs – 3 years	13	17	30
GDP – $m	$5.2	$6.8	$12.0
Wages/Salaries – $m	$3.3	$3.5	$6.8
Building Construction	**Direct**	**Indirect**	**Total**
FTEs – 10 years	26	69	94
GDP – $m	$37	$89	$126
Wages/Salaries – $m	$16	$45	$61
Project Totals	**Direct**	**Indirect**	**Total**
FTE-Years[14]	300	740	1,040
GDP – $m	$42	$96	$138
Wages/Salaries – $m	$20	$48	$68

135 Table 6 shows that development and construction activities enabled by the proposal will have significant impacts over a period of more than a decade. In fact, including flow-on (indirect) effects, I estimated that the proposal could cause:

(a) A one-time boost in GDP of $138 million;

(b) Sustain employment for 1,040 FTE-years (or 104 full-time workers for 10 years); and

(c) Additional household wages/salaries of $68 million.

136 Beyond these direct use values, the proposal will likely also generate other economic benefits, which are classified as indirect use or non-use values in the TEV framework. They include, as per my previous evidence for PC79:

(a) Providing a direct boost in market supply to help meet likely shortfalls;

[14] FTE-years equals the number of FTEs employed multiplied by the duration of employment. Thus, for example, 100 FTE-years could mean 100 people employed full time for 1 year, or 10 people employed full time for 10 years, and so on.

(b) Bolstering land market competition, which helps deliver new sections to the market quicker, and at better average prices;

(c) Providing a variety of housing options/typologies to meet diverse needs and preferences; and

(d) Contributing to achieving critical mass to support greater local retail/service provision.

TEV of Rural Production - Direct Use Value

137 Mr Everest has examined the PC79 site and identified four rural productive activities that could technically occur absent the proposal. They are:

(a) Livestock and arable

(b) Apples

(c) Grapes

(d) Strawberries and pasture/lambs

138 I extracted the financial analysis in Mr Everest's evidence for each scenario and supplemented it with data from the New Zealand Annual Enterprise Survey to derive the following measures of economic activity per hectare.

Table 13: Production Metrics **per Hectare**

Scenarios	**Output $**	**GDP $**	**FTEs**	**Wages $**
Livestock & arable	1,780	610	0.003	170
Apples	55,000	26,600	0.270	9,040
Grapes	22,250	10,760	0.109	3,660
Strawberries & lambs	26,150	12,650	0.128	4,300
Average	**26,295**	**12,660**	**0.127**	**4,290**

139 Applying these values to the 26.9 hectares of PC79 land that Mr Everest identified as capable of sustaining rural production, I estimated the value of foregone rural production for each scenario as per the table below.

Table 14: Estimated Annual Rural Production **for Subject Site** (26.9 hectares)

Scenarios	**Output $**	**GDP $**	**FTES**	**Wages $**
Livestock & arable	48,000	16,000	0.1	5,000
Apples	1,480,000	716,000	7.3	243,000
Grapes	599,000	289,000	2.9	98,000
Strawberries & lambs	703,000	340,000	3.4	116,000
Average	**707,500**	**340,250**	**3.4**	**115,500**

140 Taking the average across the scenarios, the subject site could theoretically sustain the following annual economic activity if used for rural production:

(a) Output of $707,500;

(b) GDP of $340,250;

(c) Employment for 3.4 FTEs; and

(d) Wages and salaries of $115,000.

TEV of Rural Production - Indirect Use & Non-Use Values

141 Next, I sought to estimate the remaining elements of TEV for each rural production scenario based on the data in Patterson 2013. Specifically, I used that study's breakdown of TEV for horticulture and agriculture to scale-up my direct-use estimates (of GDP) above to also include indirect use values and non-use values.

142 However, this had almost no impact on the TEV for the three horticultural scenarios (apples, grapes, and strawberries) because their direct use (GDP) values account for 99.8% of TEV.[15] The situation for the livestock and arable scenario is different, though, with direct use values accounting for only two-thirds of agricultural TEV.[16]

143 Bringing all that information together, the following table presents the annual TEV for each rural production scenario on the PC79 land.

Table 15: Annual Total Economic Value (TEV) by scenario

Scenarios	Direct Use (GDP)	Indirect Use & Non-Use	Total Economic Value (TEV)
Livestock & arable	16,000	7,800	23,800
Apples	716,000	1,600	717,600
Grapes	289,000	600	289,600
Strawberries & lambs	340,000	800	340,800
Average	**340,250**	**2,700**	**342,950**

Comparison of Long-Term Annual TEV

144 To complete my assessment, I compared PC79's TEV to the four rural production scenarios identified by Mr Everest. Now, because economic activity associated with PC79 will last only (say) 10 to 15 years while rural production would likely last longer, I compared the net present (current dollar) value of their TEVs over a 50-year timeframe.

145 The table below presents the results, where all future values have been converted to net present (current dollar) values at 10%. In short, the TEV of PC79 is far

[15] Calculated as 2,263 divided by 2,268.

[16] Calculated as 8,363 divided by 12,421

greater than the four rural production scenarios, even when all tangible and intangible values are included as per the TEV framework.

Table 16: Net Present Value of Total Economic Value (TEV) over 50 years

Scenarios	Direct Use (GDP)	Indirect Use & Non-Use	Total Economic Value (TEV)
Livestock & arable	159,000	77,500	236,500
Apples	7,100,000	15,900	7,115,900
Grapes	2,870,000	6,000	2,876,000
Strawberries & lambs	3,370,000	7,900	3,377,900
PC79 (direct one-off impacts)	21,390,000	0	21,390,000

Summary and Conclusion

146 For the reasons set out above, I believe that the proposal meets the requirements of clause 3.6(1)(c) of the NPS HPL from an economic perspective. In addition, I note that it is also likely to satisfy clause 3.6(5) of the NPS HPL because PC79's medium density housing outcomes directly minimise the extent of HPL required to provide sufficient development capacity.

Response to Section 42A report

147 The section 42A report queries the need for PC79 and considers that ample supply has recently been secured via PC68 and PC72. However, that conclusion appears to rely strongly – if not exclusively – on the recent SCGM22 modelling process, which I thoroughly debunk in this evidence. Accordingly, I reject the information base upon which the section 42A report reaches its conclusion about the need for, and economic merits of, PC79.

Summary and Conclusion

148 This evidence has assessed PC79 against the relevant provisions of the NPS HPL and has shown that it:

(a) is required to provide sufficient development capacity to meet demand for housing or business land to give effect to the NPSUD; and

(b) there are no other reasonably practicable and feasible options for providing at least sufficient development capacity within the same locality and market while achieving a well-functioning urban environment; and

(c) the environmental, social, cultural, and economic benefits of rezoning outweigh the long-term environmental, social, cultural, and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.

149 Accordingly, I conclude that PC79 meets the requirements of the NPS HPL on economic grounds, and I continue to support it on that basis.

Dated: 17 April 2023

_____

Fraser Colegrave