

**IN THE MATTER** of the Resource Management Act 1991 and the Local Government (Auckland Transitional Provisions) Act 2010

**AND**

**IN THE MATTER** The Proposed Auckland Unitary Plan Topic 013 Regional Policy Statement Urban Growth

**SUBMITTER** Redvale Quarry Limited (Further submitter number 2270)

## **STATEMENT OF EVIDENCE OF FRASER JAMES COLEGRAVE**

### **1. INTRODUCTION**

#### **Qualifications and experience**

- 1.1 I am a professional economist based in Auckland. I hold a first-class honours degree in economics from the University of Auckland (1996).
- 1.2 I have 20 years' commercial experience, the last 15 of which I have worked as an economics consultant.
- 1.3 I am the managing director of Insight Economics Limited, an economics consultancy based in Auckland. Prior to forming Insight Economics, I was a founding director of Covec Limited for 12 years.
- 1.4 I have led and completed over 200 consulting projects. My main area of expertise is land-use economics.
- 1.5 I have worked extensively on this issue for a wide range of public and private sector clients across New Zealand.
- 1.6 I regularly provide expert economic evidence for hearings before Councils, the Environment Court, Boards of Inquiry and also the Land Valuation Disputes Tribunal. A sample of recent experience is shown in the appendix.

### **Purpose and scope of evidence**

- 1.7 This evidence summarises the findings of my extensive review into the adequacy of PAUP land supply, particularly as it applies to the northern sub-region (from the East Coast Bays to Waiwera). It covers both residential and business land.
- 1.8 Specifically, my evidence will:
- (a) Define a study area for the northern sub-region (Section 3).
  - (b) Project demand for new dwellings over 30 years (Section 4).
  - (c) Quantify likely future residential land supply (Section 5).
  - (d) Reconcile residential supply and demand (Section 6).
  - (e) Forecast future demand for business floorspace (Section 7).
  - (f) Quantify the likely future supply of business floorspace (Section 8).
  - (g) Reconcile business supply and demand (Section 9).
  - (h) Provide a brief conclusion (Section 10).
- 1.9 A summary of the evidence is contained in Section 2.

### **Expert Witness Code of Conduct**

- 1.10 I have read the Code of Conduct for Expert Witnesses, contained in the Environment Court Consolidated Practice Note (2011) and I agree to comply with it. I can confirm that the issues addressed in this statement are within my area of expertise and that in preparing my evidence I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

## **2. SUMMARY OF EVIDENCE**

- 2.1 This evidence critically examines the supply and demand for residential and business land in the northern sub region, which I define as the area stretching from the East Coast Bays in the south to Waiwera in the north.

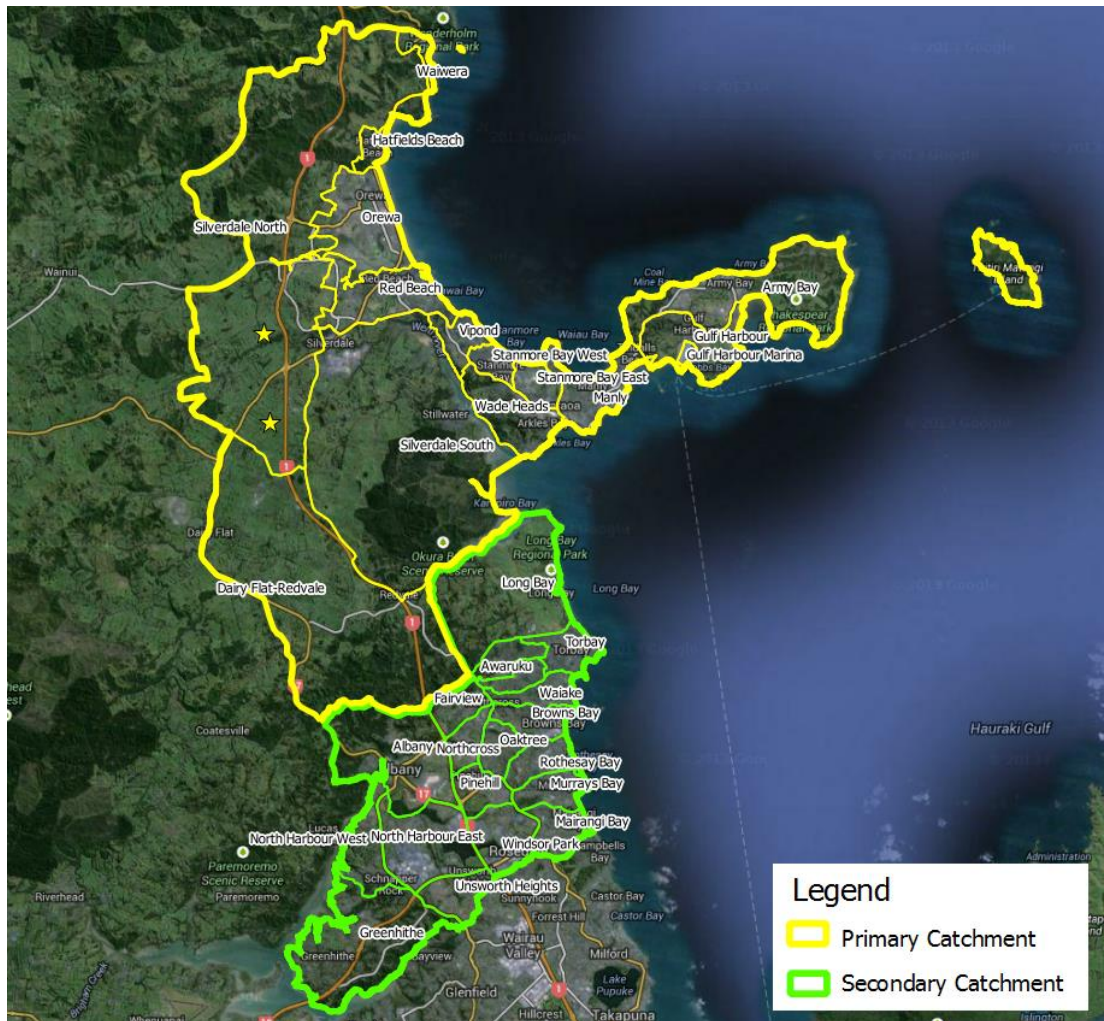
- 2.2 It analyses historic consents and a range of other data to project future demand for the study area, then it uses the results of Council's latest Capacity for Growth Study (CFGS) to determine potential market supply.
- 2.3 Overall, it finds a significant shortfall in study area residential and business land, plus a critical region-wide shortage in residential land. In fact, my estimate of future residential land supply is just over one third of the Council's 30 year target (of 400,000 new dwellings).
- 2.4 The issue is that the majority of land identified in the CFGS as having capacity will never actually contribute to market supply because it is either:
- (a) Technically infeasible for development. e.g. the site is contaminated;
  - (b) Economically unviable. i.e. the cost of development far exceeds the potential return (a major issue for land identified in the CFGS as having "redevelopment" capacity);
  - (c) Unattractive to the market. e.g. the land is poorly located, has awkward typology, or the vendor's price expectations are unrealistic;
  - (d) Displaced by other uses. e.g. land earmarked for residential development may end up being used for another purpose; or
  - (e) Withheld from the market due to speculative land banking.
- 2.5 These findings are consistent with a significant body of work recently completed by Studio D4 for the Council, which concluded that market supply will likely be only 20-50% of theoretical capacity.
- 2.6 Given the findings of my analysis, I urge the IHP to identify additional land to meet the imminent shortfall. Otherwise, the protracted land supply shortages of the past will continue to fuel inflationary pressures and, ultimately, undermine long-term economic growth.

### 3. NORTHERN SUB-REGION STUDY AREA

3.1 In order to assess sub-regional land supply and demand, I needed to derive a study area. Figure 1 shows the study area that was agreed with the Council for this purpose. It is aligned with census area boundaries to facilitate the use of various spatial data and comprises both a:

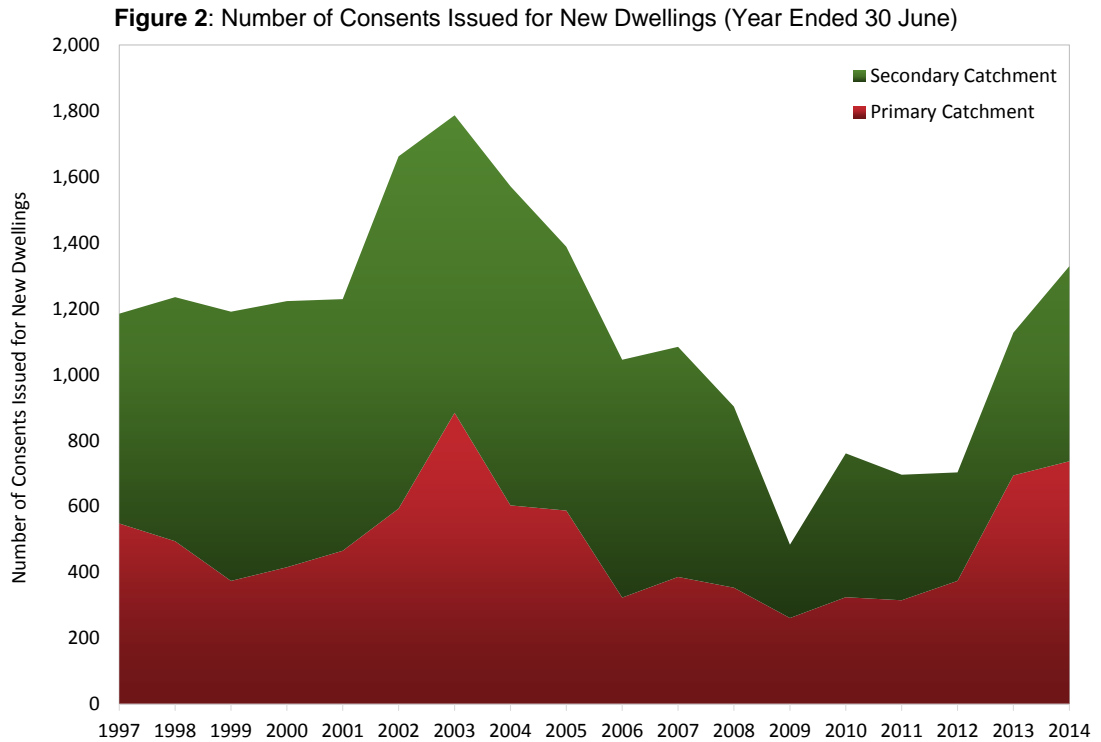
- (a) Primary catchment (in yellow), which extends from Waiwera in the north to just above Albany and Long Bay in the south, and
- (b) Secondary catchment (in green), which includes the east coast bays, plus Albany, Greenhithe and several smaller suburbs in between.

Figure 1: Map of the Study Area



#### 4. PROJECTED DWELLING DEMAND

4.1 Having derived a study area, I then reviewed historic dwelling growth to set the scene. The results are shown in the figure below.



4.2 Figure 2 shows that consents for at least 1,000 new dwellings were granted each year until the Global Financial Crisis (GFC) hit in 2008. This caused building activity to plummet, particularly in the secondary catchment. However, it has recovered quickly, and is now back to pre-GFC levels. In fact, the number of new dwellings consented over the 12 months to 30 June 2014 was the highest in nearly 10 years.

4.3 Overall, consents for 20,600 new residential dwellings were issued during the last 18 years, which translates to an average of 1,140 per annum.

4.4 Projecting the likely demand for new dwellings is complex. It requires a careful and detailed examination of several interrelated factors, such as population growth, demographic trends, rents, house prices, interest rates, incomes, and so on.

4.5 Notwithstanding the importance of these various factors, I took a fairly pragmatic approach. In short, I projected future growth simply by extrapolating historic trends and making some minor adjustments.

- 4.6 To begin, recall that the average number of new dwellings consented in the study area was 1,140 per annum. Projecting this forward over 30 years yields an initial figure of 34,200 new dwellings (i.e.  $30 \times 1,140 = 34,200$ ).
- 4.7 However, I consider this figure unrealistically conservative because it is based on an historic average that was artificially deflated by the GFC. If the effects of the GFC are excluded, the long-run historic rate of dwelling growth was 1,310 per annum. Extrapolating this forward produces an indicative 30-year forecast of 39,300 new dwellings.
- 4.8 While this appears a little more realistic, I still consider it conservative for several reasons, namely that:
- (a) The catchment includes the Albany metropolitan centre, which is rapidly becoming a sub-regional hub for a range of activities, including retail, education, entertainment, transport and commerce. As the role and function of this centre continues to evolve, it will attract and sustain even higher residential growth than before.
  - (b) Recent improvements to the public transport system (including the northern busway and associated park & ride facilities) have reduced travel times and costs for citybound commuters.
  - (c) Rapid dwelling growth in Silverdale over the last two years has revealed a significant pent-up demand for living in this locality. For example, Millwater has been experiencing run rates of about 350 dwellings per annum (at which rate it will be full by 2018).
  - (d) Future growth will be off a higher base, and therefore higher than past growth in absolute terms (all other things being equal)
- 4.9 As a result, I consider even the higher estimate of 39,300 new dwellings to significantly understate likely future demand. Indeed, it translates to only a 10% share of the Council's 30-year target (of 400,000 dwellings), even though the sub-region's has contributed 20% of new dwelling supply over the last five years. For the sake of being conservative, however, I adopt this figure in the rest of my analysis.

## 5. PROJECTED RESIDENTIAL LAND SUPPLY

5.1 As most readers will be aware, Auckland Council regularly conducts "capacity for growth studies" (CFGs) to determine the maximum theoretical capacity for growth enabled by its planning rules.

5.2 While the CFGs is not intended to provide a forecast of market supply, it does provide the most comprehensive information available about *potential* supply. It identifies the following types of residential land capacity:

- (a) **Vacant** - Capacity for dwellings on residential parcels void of any dwellings.
- (b) **Vacant Potential** - Capacity for additional dwellings on residential parcels that are partially vacant and have subdivision potential (within the constraints of planning rules) and are equal to or greater than 2,000m<sup>2</sup>.
- (c) **Redevelopment** - Capacity for additional dwellings on residential parcels if all dwellings were removed and the sites redeveloped to the maximum number of dwellings permitted (based on planning rules).
- (d) **Residential on Business** - Capacity for additional dwellings provided by development or redevelopment of business areas.
- (e) **Rural Residential** - Capacity for additional dwelling units on rural zoned titles, either through titles being currently vacant or through subdivision.
- (f) **Pipeline** - Future capacity that has been identified in the longer term strategic planning processes at the time of notification of the PAUP (September 2013) but not necessarily zoned in a way that facilitates that capacity to be realised. e.g Future Urban zones and locations identified in other strategic growth management documents.
- (g) **Special Areas** - Areas spread across the locations above that are not suitable for analysis by the other methods. In many cases these are structure plans, where an overall yield figures is provided for the structure plan area based on published information, and no modelling is required or it is not possible.

- 5.3 According to the 2013 version of the study, which reflects the PAUP zones and rules, the study area has a theoretical capacity of 50,600 new dwellings. The following table shows the break-down by catchment and capacity type.

**Table 1:** Theoretical Maximum Capacity for Dwellings in the Study Area

Capacity Type	Primary Catchment	Secondary Catchment	Study Area Total
Vacant	2,990	3890	6,880
Vacant Potential	2,250	2090	4,340
Redevelopment	1,730	10,780	12,510
Residential on Business	3,330	11,250	14,580
Rural Residential	1,050	170	1,220
Pipeline	7,270	2,050	9,320
Special Areas	980	770	1,750
<b>Totals</b>	<b>19,600</b>	<b>31,000</b>	<b>50,600</b>

- 5.4 While the capacity estimates above may seem high, it is critical to note that these are not forecasts of future supply. Rather, they are simply estimates of the maximum theoretical capacity enabled by the PAUP zones and rules.

- 5.5 This point was made abundantly clear in the evidence of Mr Balderston, who has led the CFGS project within the Council for the last few years. For example, his evidence notes that:

*“The study is not in and of itself a projection of growth, nor an estimate of the feasibility or likelihood of modelled development occurring...[it] does not account for economic or market factors (‘financial feasibility’), physical characteristics of the site other than those modelled (‘physically possible’), or ‘other factors’ such as the current owners’ intentions, community opposition or other random variables”*

- 5.6 In practice, there are several reasons why parcels with theoretical capacity (as identified by the CFGS) will never contribute to market supply.

- 5.7 First, many parcels with theoretical capacity will be infeasible for development. For example, they may have geotechnical issues, awkward topology or be contaminated. Second, even if a parcel is feasible, development may not be economically viable. For example, redevelopment of existing sites is highly unlikely where the value of improvements is significantly higher than the value of land. Third, even if a parcel is feasible and viable for development, it may not be marketable. For example, it may be poorly located or the vendor's price expectations may be unreasonable.



5.8 Finally, even if a parcel is feasible, viable and marketable for development, it still may not be available for *residential* development. For example, it may be used for business development, or held long-term and never brought to the market. Consequently, actual future supply will be only a fraction of Council's theoretical capacity estimates.

5.9 In order to translate the CFGS estimates of maximum dwelling capacity into meaningful estimates of potential future supply, I derived realisation rates for each of the seven residential capacity types identified earlier. Amongst other things, these have been informed by a detailed study of the same topic that I recently completed for the Queenstown Lakes District Council.

5.10 The following table shows the realisation rates that I have used for the analysis, along with brief explanations.

**Table 2:** Estimated 30-Year Realisation Rates

Capacity Type	Realisation	Explanation
Vacant	80%	Highly likely that some parcels will either be infeasible, unviable or unmarketable. Also likely that some parcels will come to the market outside the 30-year period of this analysis.
Vacant Potential	70%	Similar logic to vacant, but it is even more likely that some parcels will not be feasible, viable or marketable. In addition, it is also more likely that some land owners will not subdivide over the next 30 years.
Redevelopment	10%	The majority of land identified with this capacity would never be economically viable as it requires the demolition of an existing dwelling. In addition, many properties falling into this category represent well-established homes on large sections, the majority of which will remain that way in reflection of market preferences.
Residential on Business Land	33%	This category was studied in significant additional detail in the course of analysing business land. I concluded that only a third of the capacity for dwellings on business land was likely to be supplied by the market.
Rural Residential	80%	I believe that this has similar potential to vacant, with 20% taken away to reflect parcels that are either infeasible, unviable, unsuitable or simply not brought to the market over the next 30 years.
Pipeline	70%	This figure represents the joint impacts of all the factors identified earlier, and also includes a reduction relating to timing. Some of these areas may not be appropriately serviced and zoned for 10 to 20 years, and therefore may not be brought to the market within the 30 year timeframe for this analysis.
Special Areas	100%	These capacity estimates are largely taken from structure plans and hence considered reliable direct measures of likely supply.

5.11 The following table applies the estimated realisation rates above to the CFGS estimates of theoretical capacity to derive a 30-year estimate of study area supply. This is just over 23,800 dwellings.

**Table 3: Estimated 30-Year Market Supply**

Capacity Type	Theoretical Capacity	Realisation Rate	Market Supply
Vacant	6,880	80%	5,500
Vacant Potential	4,340	70%	3,030
Redevelopment	12,510	10%	1,250
Residential on Business	14,580	33%	4,810
Rural Residential	1,220	80%	970
Pipeline	9,320	70%	6,520
Special Areas	1,750	100%	1,750
<b>Total</b>	<b>50,600</b>	<b>45%</b>	<b>23,830</b>

## 6. RESIDENTIAL SUPPLY DEMAND BALANCE

- 6.1 According to my analysis above, the study area could experience demand for around 39,000 new dwellings over the next 30 years. Since market supply is likely to be only around 23,830 dwellings, this points to a potential shortfall of 15,000 dwellings, which is significant indeed.
- 6.2 However, this is not the end of the story. Applying these same realisation rates to the capacity estimated for the rest of the region also reveals a critical region-wide shortage in residential land supply, as illustrated below.<sup>1</sup>

**Table 4: Estimated 30-Year Regional Dwelling Supply**

Local Board	Theoretical Capacity	Average Realisation Rates	Likely Market Supply
Albert - Eden	12,820	21%	2,730
Devonport - Takapuna	10,710	22%	2,340
Franklin	26,670	55%	14,780
Great Barrier	3,810	48%	1,840
Henderson - Massey	36,620	27%	9,990
Hibiscus and Bays	29,270	47%	13,890
Howick	36,930	32%	11,790
Kaipatiki	15,500	20%	3,100
Mangere - Otahuhu	13,450	26%	3,450
Manurewa	17,460	24%	4,110
Maungakiekie - Tamaki	25,170	22%	5,610
Orakei	18,520	39%	7,140
Otara - Papatoetoe	23,090	26%	6,100
Papakura	18,520	38%	7,100
Puketapapa	8,640	21%	1,780
Rodney	22,090	68%	14,960
Upper Harbour	25,650	43%	11,070
Waiheke	1,620	54%	870
Waitakere Ranges	9,090	39%	3,530
Waitemata	41,740	31%	13,140
Whau	19,800	28%	5,630
<b>Region Totals</b>	<b>417,170</b>	<b>35%</b>	<b>144,950</b>

<sup>1</sup> The differing realisation rates reflect the differing mixes of capacity. For instance, some local board areas have theoretical capacity that is skewed towards infill and redevelopment, which have low realisation rates. As a result, the realisation rates for those local boards is lower.

- 6.3 In fact, according to my calculations, regional capacity equates to market supply of only 145,000 dwellings, which is just over a third of the Council's target of 400,000 over the next 30 years.
- 6.4 This should come as no surprise, however, as the results are very similar to those independently reached in a recent report for the Council, which concluded that market supply is likely to be 20% to 50% of theoretical capacity.<sup>2</sup>
- 6.5 Interestingly, however, the evidence of Dr Fairgray on behalf of the Council seeks to promote an entirely different view. It concludes that there *will* be sufficient residential capacity to meet demand, particularly over the medium term.
- 6.6 Unfortunately, however, Dr Fairgray's evidence is fundamentally flawed for two reasons. Consequently, I do not believe that his conclusions hold much (if any) weight.
- 6.7 First, Dr Fairgray appears to misconstrue the results of the CFGS as measures of market supply. However, as discussed above and as confirmed in the evidence of Mr Balderston on behalf of the Council, this is simply not the case.
- 6.8 The results of the CFGS are purely measures of the capacity enabled by the plan and do not account for a wide range of factors that will limit actual supply. The adequacy – or otherwise – of regional supply therefore cannot be inferred directly from the results of the CFGS. Instead, those results must be scaled down, just as I have done in Table 3, before reconciling with projected demand.
- 6.9 Second, in reaching his conclusion of sufficient residential capacity, Dr Fairgray appears to be focussing on the situation to 2026. In my opinion, this lacks any logical basis. Section 2.3 the Regional Policy Statement (development capacity and the supply of land for urban development) clearly articulates a 30 year timeframe. For instance, the introduction to that section states:

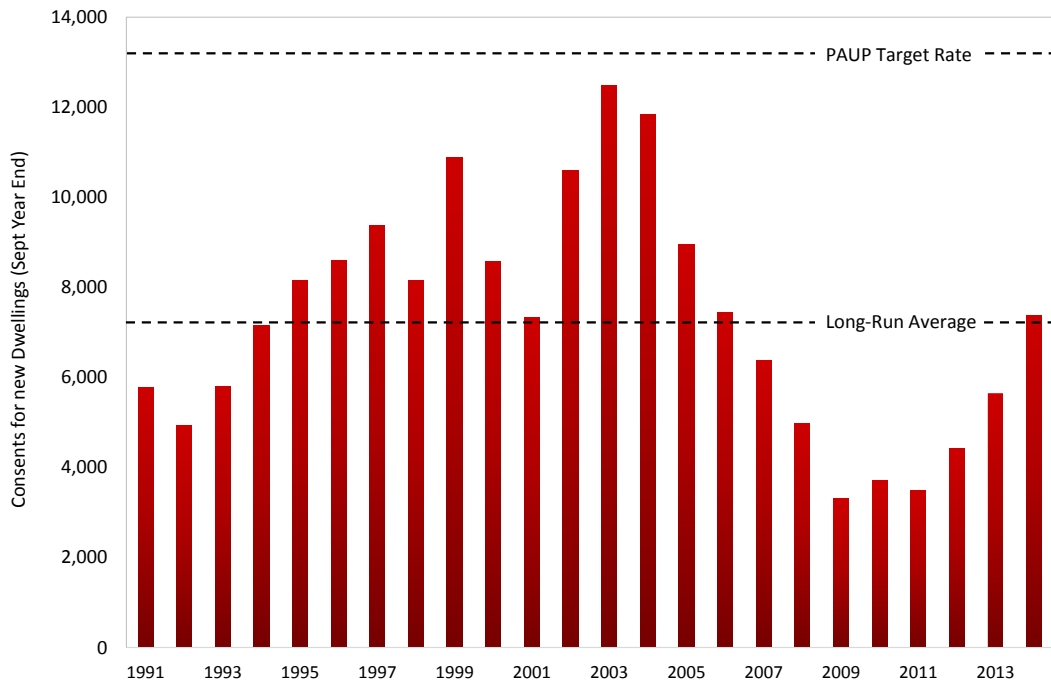
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<sup>2</sup> Fontein, P., Ray, A. & Robinson, T. (2011) Auckland Plan – Total Auckland development potential using a Fine Grained Analysis (FGA).

*“This section sets out objectives and policies to enable sufficient development capacity in the urban area and sufficient land for new housing and businesses over the next 30 years, to support population and business growth within the RUB.”*

- 6.10 In his evidence, Dr Fairgray attempts to justify his myopic view to 2026 on the basis that it “approximates the life of the PAUP itself.” Again, I am at odds to understand this, and have never heard the PAUP being described as having such a short lifespan.
- 6.11 It also worth noting that recent changes to the Local Government Act 2002 also suggest the need to adopt a longer – rather than shorter – term view when making planning decisions. Specifically, the recently-inserted section 101B of the Act now requires Councils to prepare a 30-year infrastructure strategy to facilitate more strategic long-term planning.
- 6.12 Given the explicit wording of the RPS and the recent new requirement for Council’s to adopt a 30-year infrastructure strategy, I reject Dr Fairgray’s use of a 13-year timeframe to assess supply adequacy. In addition, I reject his failure to scale the CFGS figures down to reach a more realistic picture of future supply. Put frankly, Dr Fairgray’s evidence appears to contain a number of serious issues and should therefore be treated accordingly.
- 6.13 In my opinion, a completely new approach to assessing regional land supply is required if the Council is ever to achieve its aspiration of 400,000 new dwellings over the next 30 years. Attempting to supply “just enough” to meet targets is highly likely to miss the mark and constrain the region to a future of mediocre growth.
- 6.14 To understand just how challenging the Council’s target is – and hence how enabling the Council needs to be to reach it – the following chart shows the number of new dwelling consents in Auckland since 1991.

**Figure 3: New Dwelling Consents in Auckland Since 1991**



6.15 In short, regional consents have averaged only 7,300 per annum over the last 23 years, which is just over half the long-term target of 13,300 per annum. Perhaps even more telling – over the last 23 years, the region has not managed to hit the long-term target of 13,300 dwellings even once.

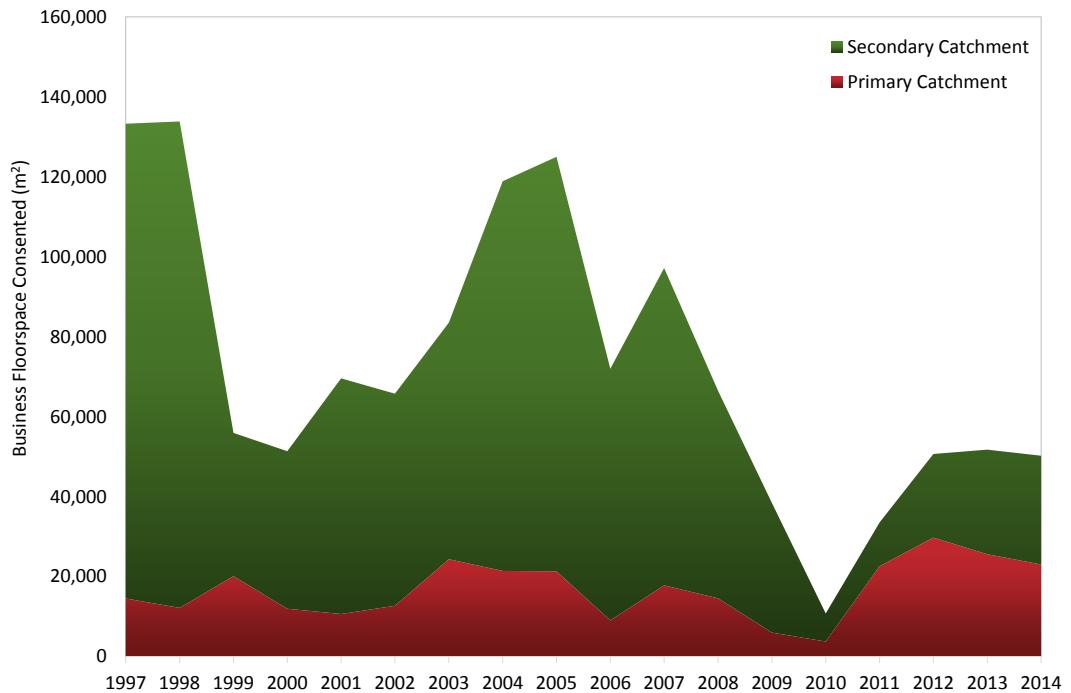
6.16 In my view, a far more realistic approach to land supply must be adopted if the Council truly wishes to sustain this growth target over the longer term.

6.17 In summary, this evidence has discovered a significant shortfall in residential land supply, not only for the study but for the region as a whole. I therefore recommend that additional land be identified immediately to meet RPS policies and objectives of a 30-year supply.

**7. BUSINESS FLOORSPACE DEMAND**

7.1 Like residential demand, I start my analysis of business floorspace demand by exploring historic trends. To that end, Figure 3 plots the quantum of new business floorspace consented in the study area each year since 1996.

**Figure 3: Area of New Business Floorspace Consented (Year Ended 30 June)**



7.2 Overall, business consents followed a broadly similar pattern to residential growth – peaking in the mid-2000s but plummeting after the GFC. While some recovery has occurred, growth appears to have plateaued at around 50,000m<sup>2</sup> GFA per year. This is well below the long-term average of 73,000m<sup>2</sup> per year since 1996.

7.3 It is also interesting to note that, while the secondary catchment has historically accounted for the bulk of study area growth, its share has declined rapidly in recent time.

7.4 This is due, in part, to the 24,000m<sup>2</sup> Silverdale Shopping Centre, which opened in 2012. In addition, it reflects the strength of demand observed in the primary catchment, both for residential and business growth.

7.5 As with residential development, projecting business floorspace is highly complex. Here, I project it via two methods and reconcile the results to reach an answer. Each method is described below, along with the corresponding projections.

**Method 1: Direct Extrapolation of Historic Consents**

7.6 The first method projects future floorspace simply by extrapolating historic trends. As noted earlier, the long-run historic average has been 73,000m<sup>2</sup> of additional business floorspace per annum.

7.7 However, as also noted above, recent development activity has been well below this level, with annual floorspace growth plateauing at around 50,000m<sup>2</sup> (despite record levels of residential growth in the study area).

7.8 While the reasons for this are unclear, I believe that they justify an element of caution with respect to demand forecasts. Accordingly, I recommend that a slightly lower average of 60,000m<sup>2</sup> per annum be adopted, which leads to a 30-year projection of 1,800,000m<sup>2</sup>.

### **Method 2: Employment Based Projections**

7.9 The second method estimates floorspace growth separately for commercial, industrial and retail development, and sums them to reach a study area total. Without going into too much detail, the commercial and industrial projections work as follows:

- (a) Project regional working age population growth.
- (b) Project the labour force participation rate (LFPR).
- (c) Apply the LFPR to the working age population to derive the future labour force.
- (d) Forecast the future unemployment rate (UR) based on long run trends.
- (e) Apply the UR to determine future employment and unemployment.
- (f) Allocate future employment to industry sectors based on long-term trends.
- (g) Overlay floorspace per employee to determine sector floorspace requirements.
- (h) Subtract existing floorspace to determine implied floorspace growth by sector.
- (i) Sum floorspace growth across sectors to reach the regional total.
- (j) Allocate a share of the regional total to the study area based on long term trends.

- 7.10 Retail floorspace growth is derived separately by forecasting retail expenditure and dividing by turnover/floorspace ratios. The results of this are then added to the commercial and industrial estimates above to calculate total study area growth.
- 7.11 Given the relative complexity of this method and the significant data involved, I do not work through all the steps here. Suffice to note that, over the next 30 years, I project study area:
- (a) Commercial floorspace to grow by 670,000m<sup>2</sup>
  - (b) Industrial floorspace to grow by 1,000,000m<sup>2</sup>, and
  - (c) Retail floorspace to grow by 600,000m<sup>2</sup>.
- 7.12 Thus, my overall estimate of total business floorspace growth under this method is 2,270,00m<sup>2</sup>.

### **Overall Estimate of Floorspace Growth**

- 7.13 Reconciling my two estimates, I conclude that study area business floorspace growth will be approximately 2,000,000m<sup>2</sup> over the next 30 years, or 66,700 m<sup>2</sup> per annum.

## **8. BUSINESS FLOORSPACE SUPPLY**

- 8.1 To estimate business floorspace capacity in the study area, I again rely on information provided in the Council's CFGS.
- 8.2 It provides three estimates of floorspace capacity for each business area, each of which reflects different assumptions about:
- (a) The proportion of business area land consumed by residential development, and
  - (b) The intensity of future business development, as measured by the floor area ratio (FAR).
- 8.3 Of the three scenarios, the one named "modified theoretical" appears to be Council's preferred option. This was described to me as being "reasonable, yet aspirational." While this may be the case for some business areas, it certainly is not for most of the business areas in my study area.



8.4 Consider, for example, its estimate of business capacity for the Albany metropolitan centre. The following map shows a recent aerial image to set the scene.

Figure 4: Existing state of the Albany Metropolitan Centre



8.5 The council's modified theoretical scenario estimates this area to contain floorspace capacity of 1.64 million m<sup>2</sup> for business and residential activities. However, currently the buildings visible above comprise less than 10% of that amount.

8.6 Further, since those existing buildings are relatively new (and contain well established activity), they are very unlikely to be redeveloped. As a result, additional capacity is likely to be realised only on the vacant land north and east of Westfield Albany.

- 8.7 To achieve the level of growth anticipated by the modified theoretical scenario on these vacant parcels would require a floor area ratio of nearly five for every building. I consider this highly unlikely, especially given that the existing buildings translate to an average FAR of around 0.25.
- 8.8 To examine how the Council could possibly estimate such high floorspace capacity for this area, I performed a detailed online search. During my travels, I stumbled across a youtube flyover video<sup>3</sup> by the Council, which showed one example of how this built form could be achieved.
- 8.9 Following are two screenshots from that video. The first shows the current situation, while the latter shows one example of how it might look in 10 years' time. If you look closely, you will notice that the Council is suggesting that three new buildings may be constructed directly on top of Westfield Albany. In my opinion, this is highly unlikely.

**Figure 4:** Screenshots from Auckland Council Flyover Video



<sup>3</sup> <http://www.youtube.com/watch?v=g0s9USZ747k>

8.10 To be perfectly frank, I consider the Council's preferred (modified theoretical) scenario highly unrealistic. Accordingly, I was unable to rely on it to produce estimates of study area supply. Same, too, for its other scenarios. As a result, I had to produce my own figures.

8.11 To construct a more accurate picture of capacity, I visited the ten largest business areas in the study area. At each, I identified every parcel of land with scope to be redeveloped more intensively. An example of this process is shown below for the North Harbour Industrial business area, where green parcels represent land with scope for additional floorspace.

**Figure 5:** Business capacity at the North Harbour Industrial area



8.12 Using data from Council's Geographic Information System files, I calculated the land area of all developable sites within our business areas of interest. A realistic floor area ratio was then applied to each business area to reflect the intensity of development achievable. These ranged from 0.4 on light industrial land to 2.0 at Albany Metropolitan Centre.

8.13 This method yielded direct estimates of business floorspace capacity for the 10 largest areas. For the remaining areas, I scaled Council's estimates

down by 12%. This was the average amount by which our estimates differed from Councils for 9 of the largest 10 areas.<sup>4</sup>

8.14 The following table shows my resulting estimates of floorspace capacity for the study area.

**Table 5: Study Area Business Floorspace Supply**

<b>Centre</b>	<b>Modified Theoretical Capacity</b>	<b>Market Realisable Capacity</b>
<b>Primary Catchment</b>		
Beverly Road Mixed Use	15,040	5,300
Gulf Harbour Local Centre	0	0
Orewa Mixed Use	30,730	10,820
Orewa Town Centre	44,000	19,370
Silverdale South General Business	62,010	54,040
Silverdale South Heavy Industry	21,230	18,690
Silverdale South Light Industry	184,440	102,200
Silverdale South Mixed Use	39,660	13,970
Silverdale Town Centre	174,040	23,710
Silverdale West General Business	157,430	216,360
Whangaparaoa Business Mixed Use	141,020	19,590
Whangaparaoa Town Centre	25,820	11,370
<b>Primary Catchment Total</b>	<b>895,420</b>	<b>495,420</b>
<b>Secondary Catchment</b>		
Albany Business Park	119,840	104,430
Albany Metropolitan Centre	1,637,380	259,320
Albany Village Light Industry	13,350	11,630
Albany Village Local Centre	46,830	16,490
Apollo Drive, Interplex, Constellation Drive	9,120	118,050
Browns Bay Mixed Use	27,820	9,800
Browns Bay Town Centre	36,390	16,020
Constellation Drive General Business	9,230	8,040
Greville Road Local Centre	35,100	12,360
Mairangi Bay Local Centre	6,140	2,160
Mairangi Bay Mixed Use	850	300
North Harbour Industrial Estate General Business	1,060	920
North Harbour Industrial Estate Light Industry	0	47,100
Rosedale Road/Tawa Road General Business	5,790	5,050
Rosedale Road/Tawa Road Light Industry	12,300	12,010
<b>Secondary Catchment Total</b>	<b>1,961,200</b>	<b>623,680</b>
<b>Study Area Total</b>	<b>2,856,620</b>	<b>1,119,100</b>

<sup>4</sup> The 10<sup>th</sup> (and largest) centre was Albany. This was a total outlier, with our capacity estimate equal to only 20 of the Council's estimate. It was excluded to avoid distorting the average.

8.15 Overall, I estimate realisable study area business floorspace capacity to be just over 1.1 million m<sup>2</sup> compared to 2.8 million m<sup>2</sup> under Council's preferred scenario.

## 9. **BUSINESS SUPPLY DEMAND BALANCE**

9.1 My analysis has identified demand for around 2 million m<sup>2</sup> of new business floorspace in the study area over the next 30 years. However, my corresponding estimate of supply is only 1.1 million m<sup>2</sup>, leading to a potential shortfall of nearly 0.9 million m<sup>2</sup>.

## 10. **CONCLUSIONS**

10.1 This evidence has carefully examined the likely supply and demand for residential and business land in the northern sub-region and discovered a significant shortfall in both. In addition, it has identified a critical region-wide shortfall in residential land supply.

10.2 In order to realise the Council's aspirations for future growth, it needs to rapidly identify additional land. Otherwise, the protracted supply constraints of the past will continue to fuel inflationary pressures and hamper regional economic growth.

**Fraser Colegrave**

**1 December 2014**