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Outlook for Auckland residential construction

How many dwellings should we be building, and can we?

17 August 2015

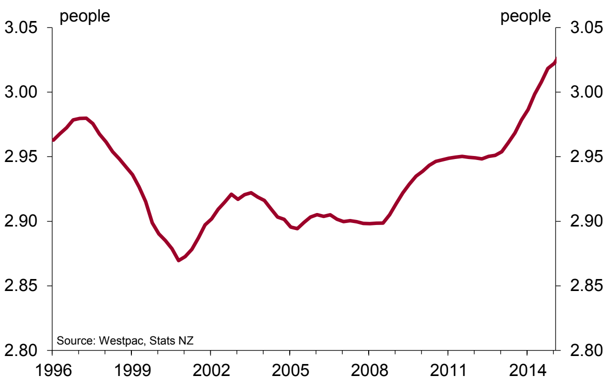
- Auckland continues to build fewer dwellings than is required to meet the demands of population growth.
- The construction industry can deliver 10,800 dwellings each year (a 30% increase on today's levels) over the next eight years without serious risk of overbuilding.
- To reach 10,800 dwellings a year, a further 7,700 construction workers will be needed, which we believe could easily be sourced locally, based on the Canterbury experience.
- We anticipate that 10,800 dwellings a year will be consented by the June 2017 year.
- However, we must overcome a range of other impediments to reach this target including:
  - maintaining build quality through more training and supervision
  - incentivising land-owners and developers to bring sections and new-builds to market faster
  - moving faster and more realistically in planning and approving subdivisions
  - adopting a more pragmatic approach to building consents and inspections.

Demand big, supply small

We are not building enough new housing in Auckland to meet existing demand. This is evidenced by an unsustainable increase in the number of people per dwelling over the last seven years.

For several years, Westpac has been analysing population growth across New Zealand by region, and investigating whether or not sufficient dwellings are being produced at a regional level.[1] The basis of this analysis is how the number of residents per dwelling is changing in each region relative to the long-term downward trend. If the number of people per dwelling is bucking the downward trend, this indicates a shortfall of new housing relative to population growth.

People per dwelling – Auckland



[1] See for instance http://www.westpac.co.nz/assets/Business/Economic-Updates/2014/Bulletins-2014/Where-should-we-build-now-March-2014.pdf

Since December 2008, the average number of people per dwelling in Auckland has grown from 2.90 to 3.02, reversing the trend seen in the city and across New Zealand over the previous decade. The rate of the change has sharpened since September 2013, as migration has accelerated.

To put this in perspective, the number of people per dwelling in New Zealand overall in 2013 was around 2.52. Excluding Auckland, it was just 2.36.

Demographic differences may explain parts of Auckland's higher number of residents per dwelling. Auckland's population is much younger and more culturally diverse than in many other parts of New Zealand. But a large part of the recent change in Auckland's people per dwelling ratio is probably involuntary and is unsustainable over the long term. Either delivery of housing will have to ramp up considerably, or the anticipated population growth will fail to be realised.

How many dwellings should we be building?

We estimate that Auckland should be building around 10,800 dwellings a year over the next eight years, a target that is both achievable and sustainable. This would comfortably accommodate expected population growth and bring the average number of people per dwelling down.

The Auckland Housing Action Plan estimates that we need to build 13,000 dwellings in Auckland per year for the next 30 years. This is predicated on higher population growth projections than we envisage, and could lead to an unhelpful boom-bust scenario for the industry, and to poorer build quality. At the same time, we certainly need to build many more than the current 8,300 a year.

We reach our estimate of 10,800 by considering two factors that impact housing demand:

- long-term population growth
- long-term sustainable number of people per dwelling.

1. How many people will we need to house?

We estimate Auckland's population will grow to 1.77 million by 2023, an increase of around 273,000 from 2013 levels. This is broadly in line with the Statistics New Zealand medium scenario, but significantly lower than the Proposed Auckland Unitary Plan (PAUP) assumption.

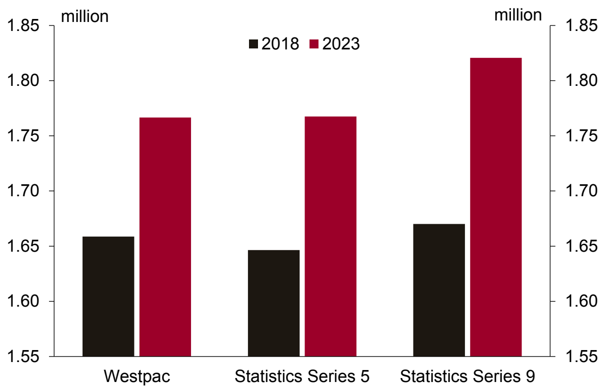
Statistics New Zealand produces a range of growth scenarios in its sub-national population forecasts. It is well-documented that in the period up to the 2006 census, Auckland's population growth exceeded even the highest projections (known as Series 9). In the period to 2013, the opposite was true, with actual growth lighter than expected in the middle-ground Series 5.

Nevertheless, overall population growth in Auckland has been significant, with 120,000 residents added between 2006 and 2013 (more than 17,000 a year).

The most recent projections and forecasts for Auckland growth show an additional 273,000 to 327,000 residents over the 10 years to 2023, depending on whose numbers you use:

- **Statistics New Zealand Series 5 and Series 9:** These series assume different rates of migration, fertility and mortality (medium and high, respectively). However, they are projections rather than forecasts, with net migration figures unadjusted for the point in the cycle at which we find ourselves. The more growth-oriented assumptions of average annual births, deaths and migration lead to the far higher population growth scenario (Series 9).
- **PAUP:** The PAUP assumes growth closer to Series 9, with Auckland's population growing to near 2.5 million over the next 30 years, or around 33,000 a year.
- **Westpac's population forecasts:** Our forecasts are based on a combination of the same three factors – births, deaths and migration. Crucially, however, they allow for the current boom in net inward migration, and acknowledge that over the next few years, migration will fall. The final figure for net population growth by 2023 is similar to the Series 5 figure, but the path by which we get there is quite different.

Auckland population growth



In modelling the number of dwellings we need to deliver, and people per dwelling, we therefore adopt the Westpac quarterly population growth forecasts.

2. How big will households be?

We expect the number of people per dwelling to decline slowly over time more in line with long-term trends, to around 2.91 over the next eight years, as we build more dwellings. This will reduce the imbalance between supply and demand.

We have already made the point that current rises in people per dwelling are unsustainable. Either we will see population growth fall, or we will see rationalisation of this number.

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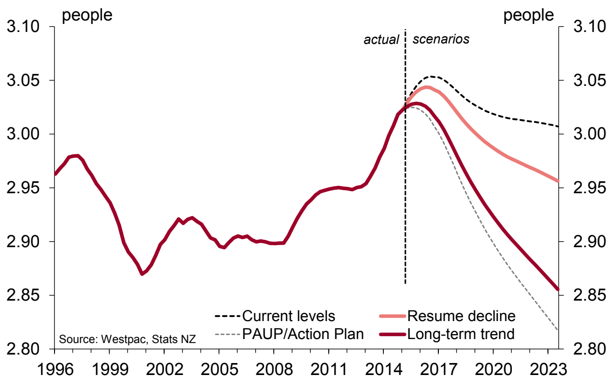
We present four scenarios for delivery of new dwellings, based on Westpac forecasts of Auckland's population growth to 2023. In all cases, the bump in 2014 to 2016 is caused by net migration peaking before falling quite sharply.

People per dwelling and dwelling delivery scenarios



- **Scenario One:** If we continue to deliver 8,300 new dwellings a year, in line with ***current levels***, people per dwelling will peak at 3.05. Longer term, people per dwelling will remain elevated albeit at a slightly lower level as migration moderates.
- **Scenario Two:** To ***resume the decline*** in people per dwelling Auckland experienced in the decade to 2006, we would need to build a further 1,200 dwellings a year, or 9,500 annually. By 2023, this would see people per dwelling decline to 2.96, around the same as the 1996 average.
- **Scenario Three:** A scenario in which Auckland's number of people per dwelling reverts to where it would have been assuming a slow annual decline since 1996 in line with ***long-term trends***, would require us to build 12,000 dwellings a year over the next 8 years.
- **Scenario Four:** The Auckland ***PAUP/Action Plan*** scenario of 13,000 dwellings a year would see an even sharper decline in people per dwelling, to around 2.82 by 2023.

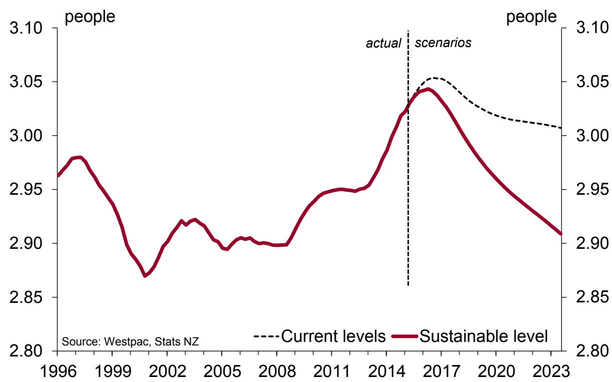
Scenarios One and Two do not go far enough to address the housing shortfall. If demand continues to remain unmet to this extent, we would expect even the current population forecasts to fail to materialise. People per dwelling will fall due to a reduction in population growth rather than an increase in supply.

Scenarios Three and Four are unlikely to eventuate because:

- They are both at building rates too high to be sustainable for the long term. We suspect that the obvious risk of boom/bust would actually discourage that level of building by the industry in the first place.
- At no point in the last 19 years has Auckland produced 13,000 new dwellings within a 12-month period.
- Based on medium-term population growth expectations, the PAUP/Action Plan scenario would see people per dwelling fall beyond a sustainable level, leading to an over-supply of housing.
- As we explain in greater detail later, there are several impediments to reaching the levels of production assumed in Scenarios Three and Four.

Realistically, the likely figure for housebuilding lies somewhere between Scenarios Two and Three, and would go some way to reversing the rise in people per dwelling over the last seven years. We believe building somewhere in the region of 10,800 a year is achievable and sustainable without undue risk of overshooting. Ramping up to 10,800 dwellings a year will cause people per dwelling to peak in September 2016, before falling away as migration slows.

People per dwelling – sustainable scenario



Even if the Statistics New Zealand Series 9 growth picture does eventuate over the next 30 years, 13,000 dwellings a year will reduce people per dwelling to as low as 2.75 by 2043. This is a particularly low end-point. If population growth is more in line with Series 5 forecasts over the next 30 years, 13,000 dwellings a year would lead to a massive oversupply of housing. Even in the short-term, delivering 13,000 dwellings a year would likely lead to a sharp fall in people per dwelling by 2023 as migration moderates. Sensitivity tests indicate that if migration holds up for longer, people per dwelling will still fall strongly in this scenario.

Yet a number of potential impediments must be overcome to achieve even the more modest target of 10,800 dwellings a year.

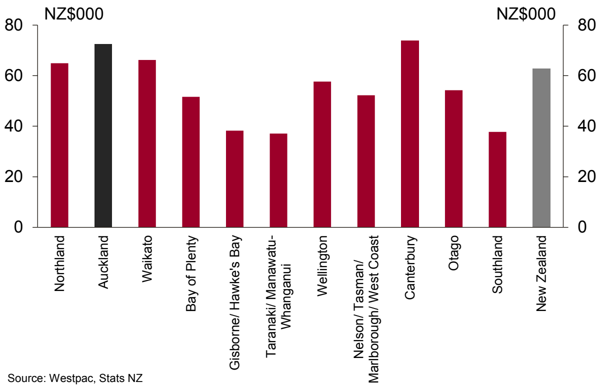
Can we build this many dwellings?

1. Yes, we have the workers

To scale up to 10,800 dwellings a year, we will need 7,700 more workers than today, which the Canterbury experience has taught us is easily achievable. Auckland has a vast number of local residents who could be added to the construction labour force. However, we acknowledge that ensuring the quality of the new residential buildings will be a challenge.

Auckland builders appear to be operating near capacity, if we compare consent value per worker across New Zealand regions. This means to build more, we will need to employ more workers.

Construction productivity by region

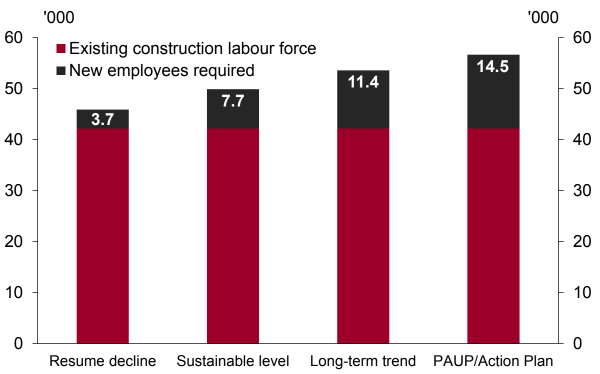


Source: Westpac, Stats NZ

Workers in Canterbury and Auckland are delivering twice as much in terms of real consent value per worker than their counterparts in Taranaki / Whanganui-Manawatu. Output by this measure is 15% higher in Auckland than the national average.

We estimate the number of construction workers in Auckland as of March 2015 at around 42,000. This figure is 5,000 higher than a year before as construction activity in Auckland has grown. To scale up to 10,800 dwellings a year, as per our forecast, would require a further 7,700 workers. To resume a slow decline in people per dwelling from the higher level would require 3,700 more workers. The PAUP/Action Plan scenario would require 14,500 more workers.

Capacity shortfall by people per dwelling scenario



Source: Westpac, Stats NZ

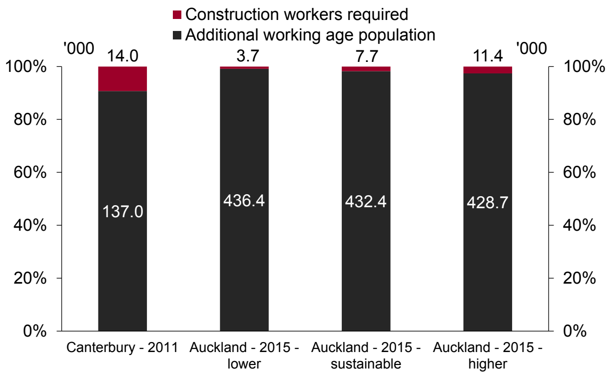
So, where will these workers come from?

Our recent work on the employment impacts of the wind-down of the Canterbury rebuild provides insights into where workers are likely to come from.[2] On a net basis, a large proportion of workers in the rebuild came from within the region; unemployment and non-participation in the labour force both fell sharply. Although net immigration from other parts of New Zealand and overseas also played a role, we would argue it was smaller than anecdote suggests.

In Auckland, it will be hard to attract large numbers of temporary construction workers. The very shortage of housing that construction workers moving to Auckland would seek to overcome presents a massive barrier to moving there. Not only are housing costs sharply higher in Auckland, but the commitment to providing temporary housing options seen in Canterbury do not exist in our largest city. This suggests that even more than in the case of Canterbury, workers are likely to be locally sourced.

Do we have capacity within the ranks of the unemployed and non-participators in Auckland, to cover the shortfall of workers? Yes, we do.

Capacity shortfall as a share of non-working adults



Source: Westpac, Stats NZ

The vast bulk of new workers to build Auckland's dwellings could be sourced locally, with a barely noticeable impact on the overall non-working adult population figures. The 14,000 workers added to the Canterbury construction labour force, while in fact drawn from numerous sources, were equivalent to 9.3% of Canterbury's non-working adult population. The sustainable scenario of 10,800 dwellings a year would require just 1.7% of the current non-working adult population in Auckland.

But, as highlighted further below, sufficient training needs to be undertaken to ensure the quality of construction is not negatively affected as people with less construction experience enter the labour force.

As an aside, we would point out that if some of the temporary workers who have migrated to Canterbury to help with the rebuild display the same mobility in moving to Auckland,

[2] See http://www.westpac.co.nz/assets/Business/Economic-Updates/2015/Bulletins-2015/Forewarned-is-forearmed-August-2015.pdf

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this could contribute up to 4,300 workers who already have construction experience. However, as we have already argued, there are other more significant barriers to a move to Auckland that would mitigate against this.

2. But do these workers have the skills?

A lot more training and supervision is going to be required to prevent the delivery of sub-standard dwellings if the majority of the workers needed to boost building capacity in Auckland are sourced locally.

It may be no coincidence that the last time Auckland built more than 12,000 dwellings in a year, it was in a far less regulated market in which a large proportion of dwellings turned out to be poorly constructed and leak-prone.

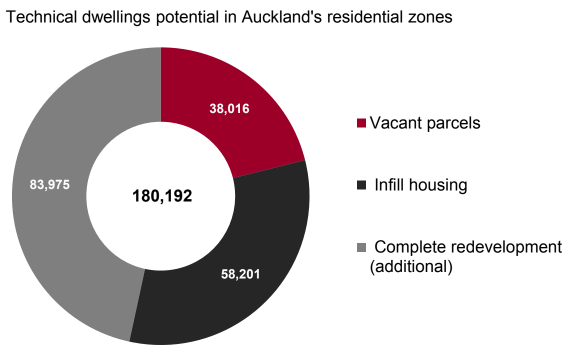
Auckland Council has recently reported that it is failing around one-third of all building inspections.[3] One of the key reasons cited for this high failure rate, by both Council and industry representative bodies such as the Certified Builders Association of New Zealand, is a lack of skilled people, or of sufficient oversight.

3. How much land is really available?

There is a gap between how much land is theoretically available for new dwellings, and how many vacant sections or spec-built homes are actually being brought to market. Sufficient homes will not be provided in a timely manner unless we bridge this gap.

Studies have shown that there are tens of thousands of building sites ***technically*** available in Auckland.

Theoretical dwelling capacity



Source: Westpac, Stats NZ

For instance, an Auckland Council report released in June 2014 showed that 58,200 dwellings could be produced through in-fill housing using zoning proposed in the PAUP.[4] This is far higher than the estimated 38,000 dwellings that could be produced on vacant sections even under the PAUP. And if we went even further and bull-dozed the houses on partially-developed sections, and redeveloped them to their maximum potential under the PAUP, we could build 180,200 new dwellings.

But the ***actual*** number of sections with or without new dwellings coming to market is far lower. There are at least two reasons for this:

- Theoretical (technical) availability of land and the number of people capable and willing to subdivide their properties are far from the same thing. Subdivision is an incredibly time- and resource consuming process (up to $100,000 to divide a section in two, once development and financial contributions, surveying, resource consents, services and the like are included). And many people, if they can afford to, would much rather live on their quarter acre section.
- Many large-scale land developments are balance-sheet financed. In times of high demand growth and commensurate strong price increases, there is little incentive to bring land to market faster. In current market conditions, holding off for a further year (exacerbating the supply problem) may bring a price premium of 10% or more.

4. The subdivision consenting hiccup

The time (and associated costs) of getting subdivisions approved by Council is slowing delivery of new homes due to the ever-growing scope of Council design guides and their interpretation.

As the Productivity Commission and a recent report by the Registered Master Builders Association and the Construction Strategy Group have highlighted, regulatory processes have gone too far in imposing additional constraints on getting subdivisions approved[5]. Processes to get new subdivisions approved can last years rather than a couple of months, and involve several rounds of revised or additional requirements before approval is granted. This holds the market back from meeting the immediate housing shortage.

Even with more than 80 Special Housing Areas now set aside in Auckland as part of the Housing Accord, there is an ongoing shortage of vacant sections or spec-built homes being delivered to market. For instance, only 588 dwellings and sections were consented in Auckland's 84 SHAs in the 6 months to March 2015 (or seven dwellings and sections per SHA).[6] This was less than 15% of total new dwelling consents issued in Auckland in the six months to March, suggesting at present, 18 months into the Housing Accord, SHAs continue to play a very small role.

As an aside we would note that the Housing Accord measure of housing delivery – a combination of sections and dwellings delivered to market – clouds, rather than clarifies, the answer to the question of how many dwellings we are delivering. This is partly because of the overlap (acknowledged in Accord reporting) between sections and dwellings, but is also because

[3] See http://www.stuff.co.nz/business/69725450/Shoddy-building-practices-rife-in-Auckland-building-inspectors-say for instance.
[4] See http://www.aucklandcouncil.govt.nz/EN/planspoliciesprojects/reports/technicalpublications/Documents/tr2014010capacityforgrowthstudy2013results.pdf
[5] See http://www.productivity.govt.nz/sites/default/files/Final%20Housing%20Affordability%20Report_0_0.pdf and http://www.masterbuilder.org.nz/media/9058/The-impact-of-regulation-on-housing-affordability-FINAL.pdf for instance.
[6] See http://www.mbie.govt.nz/what-we-do/housing/pdf-document-library/Auckland-Housing-Accord-Monitoring-Report-6.pdf

some sections may have multiple dwellings built on them. A better measure would be the number of units (whether stand-alone, terraced or apartments) receiving Code Compliance Certificates or passing final inspections each year. This figure needs to reach 10,800, as highlighted earlier, before we can have any certainty that we are putting a dent in the undersupply of housing.

5. Council's building risk aversion

Slower building consent processes and a big increase in building inspections and failures are also preventing faster delivery of housing.

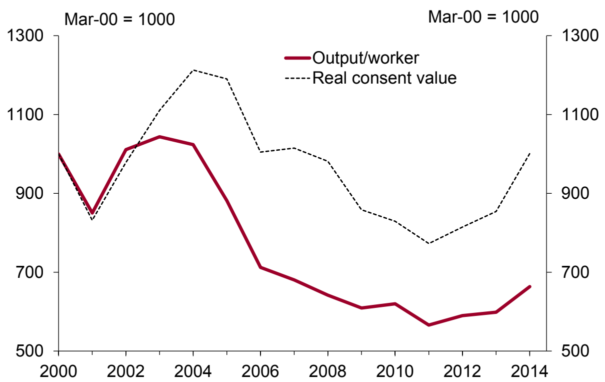
The pendulum of building compliance regulation has swung strongly in the other direction since the cowboy days of the early 2000s construction. This is a rational response but slows down both the building consenting and the building inspection processes. It argues further against an increase in Auckland's annual building consents to 2004 levels, and for the need for several thousand more workers to deliver 10,800 dwellings a year.

Builders report that the level of detail required for a building consent document has risen two- or three-fold since the early 2000s. This is not surprising. Consenting authorities have paid a heavy financial and credibility price for approving poorly designed and constructed dwellings delivered in the 1990s and early 2000s.

These far more detailed building consent applications also require far more Council time and effort to review and approve. This makes the nearly 12,950 consents approved in the 2004 calendar year a hard feat to repeat. That figure was achieved in a year in which future leaky buildings were still being produced and regulation was poor.

A look at changes in productivity and real consent values indicates a large decline in output per worker since the Building Code changes in 2004/5 and the tightening up of the consenting and inspection regime.

Household size and dwelling delivery scenarios



In the years 2000 to 2002, when building work was subdued, output per worker moved in lock-step with workloads. Previous research shows this pattern is common in the building industry. The industry is slow to shed jobs during downturns, and slow to add them during upturns.[7] This leaves real output per worker broadly in line with changes in workload.

But at much higher workloads, as we saw in Auckland in 2003 to 2005, a maximum output per worker is reached, and output per worker plateaus. But a seemingly inexplicable anomaly occurred in the year to March 2005; output per worker fell away by 14% as workloads fell just 2%.

A simple correlation analysis shows a strong relationship between workloads and output per worker over the 5 years to 2004, and an even stronger relationship between 2006 and 2014. But the relationship between these variables is uncoupled in the year to March 2005. Nationally we see a similar uncoupling of workloads and output per worker in the March 2005 year.

In other words, something other than a changing workload determined this 12% step reduction in Auckland construction productivity. Looking to other factors in the New Zealand construction environment at the time, by far the most notable change was the introduction of the new Building Act and revised Building Code. The first provisions of the new Act came into effect from November 2004, and the rest by 31 March 2005. With it came a more stringent Building Code and a more regimented Council consenting and inspection process in response to the leaky buildings disaster. Worker productivity rates have never recovered, and a "new normal" appears to have been established.

Further evidence of the slowdown in delivery of housing associated with the new regime is a recent report by the Office of the Auditor General. It shows that 70% of building consent applications at Auckland Council go on hold pending further information.[8] This indicates a mismatch between the information Council expects so it can reduce risk in consenting a plan, and what designers are providing.

On the inspections side, as already noted, a high proportion are failing. While a large part of the blame will be the lack of skills and supervision discussed previously, some in the industry do point to overly-zealous inspections.

It is unreasonable to expect output per worker to return to the bad old days of no regulation. However, the building industry and consenting authorities need to agree on what is actually expected to be included in a building consent application, and the standards required to pass an inspection.

[7] See http://www.branz.co.nz/cms_show_download.php?id=db0ab6091f9fb125f8fe853534bba2c888af5cd7
[8] See http://oag.govt.nz/2015/auckland-building-consents/docs/auckland-building-consents.pdf

What does this mean for Auckland residential construction?

We conclude that the industry and regulators can sustain delivery of 10,800 dwellings a year over the next eight years without serious risk of overshooting. Getting to that level will require a 30% increase in capacity, and we estimate it will take two years to get there. It will be hard to sustain the rate of growth seen over the last two years as the number of consents grows in absolute terms.

But getting to this realistic level of 10,800 dwellings a year will require a lot more action:

- ***Developers and builders*** need to keep building, build more, and not be deterred from building by short-term fluctuations in migration. There is more than enough pent-up demand reflected in average people per dwellings to provide a medium- to long-term pipeline.
- ***Builders, training providers and government*** need to work hard to increase the number of people being trained to build.
- ***Builders and regulators*** need to monitor quality more closely, through better supervision, to ensure we not only prevent another legacy of disastrous building through a boom, but to reduce the time delays of inspection failures.
- ***Designers, developers and builders*** need to be more attentive to detail, ensuring that building consents submitted to Council have the requisite detail to reduce the likelihood of a clock-stop.
- ***Council and central government*** need to strongly incentivise land-owners and developers to bring sections and new-builds to market faster, adopting both carrot and stick if necessary.
- ***Council*** needs to move faster in approving subdivisions such that the regulatory process is not an impediment to bringing sections and housing to market. This will involve scaling back on the add-ons suggested by design guides and their interpretation, which cause time delays and cost blow-outs on developments.
- ***Council*** needs to adopt a more pragmatic (perhaps a risk and impact matrix) in inspections to reduce the risk of inspection failures on low/no-risk technicalities.

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