

Auckland Connections Forecasts

12 August 2014

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Background

Covec was recently engaged by Vector to develop 10-year forecasts of gross new connections to Vector's electricity and reticulated gas networks in Auckland. Separate forecasts were developed for residential and non-residential customer segments. The residential forecasts were based on projections of population and the average number of people per household (household size) in the Auckland region. Forecasts for the non-residential segments were generally based on economic drivers rather than population.

This note discusses the Auckland population and household size projections that we used as inputs to the residential forecasts, and examines the relationship between population growth and new residential electricity connections.

We also look at the latest available residential building consent data for Auckland. Building consents are a good leading indicator of new residential electricity connections in the short term, as there is up to a 12 month lag between consent for a new dwelling being issued and a corresponding new electricity connection.

Population projections

Our analysis was based on population projections for the Auckland region prepared by Statistics New Zealand. The most recent projections available at the time we produced our forecasts were published by Statistics New Zealand in October 2012.¹ These projections were based on the 2006 Census and were prepared before the 2013 Census was conducted. Statistics New Zealand will release new national population projections in November 2014, but new regional projections will not be available until early 2015.²

The Statistics New Zealand October 2012 population projections for the Auckland region are shown in Table 1 along with calculated compound annual growth rates for each five year period.

¹ See http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/subnational-population-projections-info-releases.aspx.

² See http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections.aspx.

Table 1 Statistics New Zealand October 2012 population projections for the Auckland region.

	2006 actual	2011 forecast	2016 forecast	2021 forecast	2026 forecast
Population (as at June)					
High		1,497,000	1,631,400	1,788,700	1,952,700
Medium	1,373,000	1,485,300	1,591,200	1,716,400	1,843,500
Low		1,473,600	1,550,700	1,643,400	1,734,200
Compound annual growth rate					
High		1.7%	1.7%	1.9%	1.8%
Medium		1.6%	1.4%	1.5%	1.4%
Low		1.4%	1.0%	1.2%	1.1%

Source: http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/SubnationalPopulationProjections_HOTP0631UpdateOct12.aspx

At the time we prepared our forecasts, some initial population counts from the 2013 Census had been released, including the 'usually resident' population for Auckland (Table 2). This measure of population differs from the June population used in the population projections, but the growth rate of the usually resident population is expected to be similar to that of the June population estimate. The Census usually resident population counts are also available for all other regions and territorial authority areas in New Zealand (see http://www.stats.govt.nz/browse_for_stats/population/census_counts/2013CensusUsuallyResidentPopulationCounts_HOTP2013Census.aspx).

Table 2 Census usually resident population counts for the Auckland region.

	1996	2001	2006	2013
Population	1,068,645	1,160,271	1,304,961	1,415,550
CAGR		1.7%	2.4%	1.2%

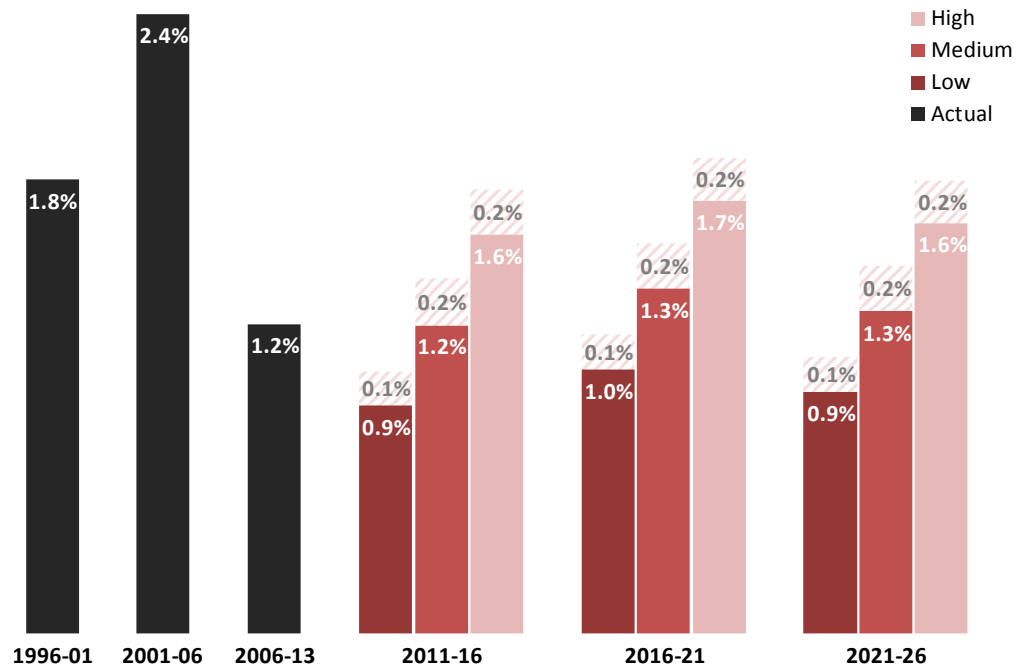
Source: http://www.stats.govt.nz/browse_for_stats/population/census_counts/2013CensusUsuallyResidentPopulationCounts_HOTP2013Census.aspx.

The Census data indicates that the Auckland population grew at a compound annual rate of 1.2% between 2006 and 2013. In comparison, the medium scenario of the October 2012 population projections predicted a compound annual growth rate of 1.6% between 2006 and 2011, and 1.4% between 2011 and 2016. The actual growth rate between 2006 was thus lower than the growth rate in the low scenario for 2006 to 2011 and in the middle of the low and the medium scenarios for 2011 to 2016. In addition, the 2013 Census results revealed a significant slowdown in Auckland population growth from a compound annual rate of 2.4% between 2001 and 2006 to 1.2% between 2006 and 2013.

On the basis of this information, we formed the view that the population growth rates in the October 2012 population projections were slightly too high. We calculated an adjusted medium scenario by using the average of the medium and low growth rates from the October 2012 projections, and adjusted the high and low scenarios proportionately. In practice this resulted in a reduction of the medium growth rate by

approximately 0.2% in each five-year period. This is summarised in Figure 1, where the striped bars reflect our downwards adjustment of the October 2012 projections.

Figure 1 Summary of Auckland population growth rate analysis (compound annual growth).

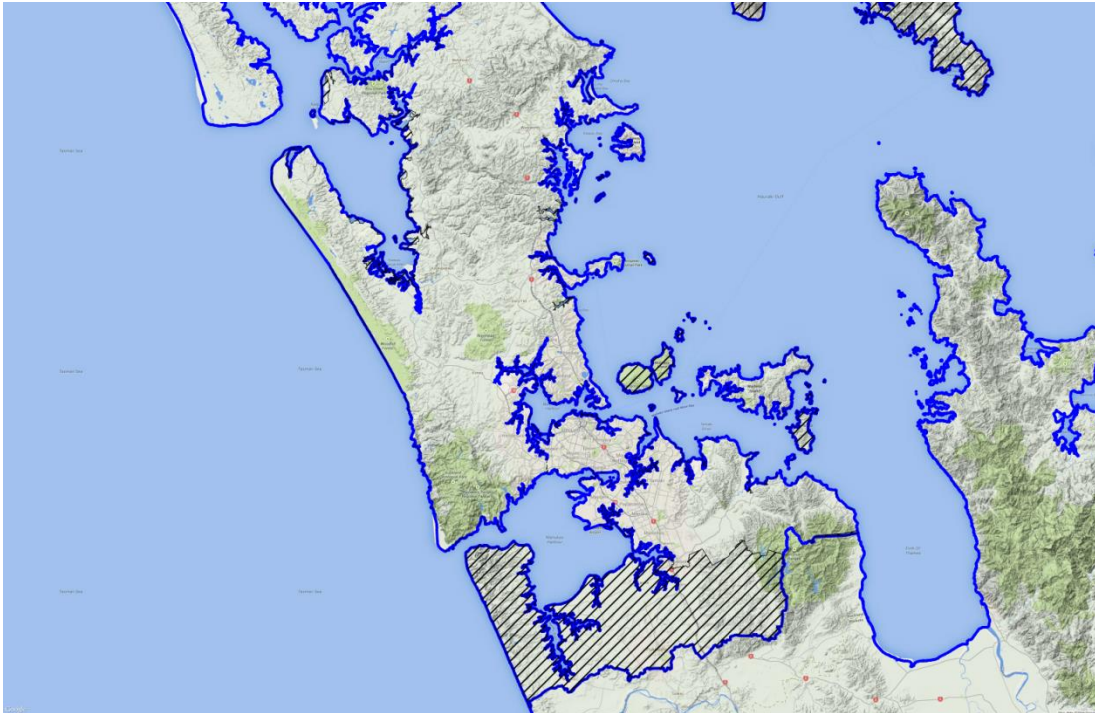


Source: Covec analysis of Statistics New Zealand data.

It is also important to note that Vector’s electricity network does not cover the entire Auckland region as defined by Statistics New Zealand. Figure 2 shows a comparison of Vector’s electricity network with the Auckland region, with the striped areas showing parts of the region that are not covered by Vector’s network.

The difference is predominantly in the south, including areas around Drury and Pukehoke. Using results from the Census, we estimate that Vector’s network covers 95.3% of Auckland’s current population and covered areas that contributed 95.1% of the population growth in Auckland between 2001 and 2013.

Figure 2 Comparison of Vector's electricity network extent with the official Auckland region.



Source: Covec analysis of Statistics New Zealand and Vector data.