# **Comparison of Population Projections and Estimates for the Waikato Region in 2018 and 2019**

*Michael Cameron, University of Waikato, January 2020*

**Introduction**

This document briefly compares three sets of population projections for territorial authorities in the Waikato Region:

1. Statistics New Zealand 2013-base projections released in 2015 (Low, Medium and High variants);
2. University of Waikato 2013-base projections released in 2016 (Low, Medium and High variants); and
3. Statistics New Zealand 2013-base projections update released in 2017 (Low, Medium and High variants).

In addition, it compares the projections with the 2018 Census Usually Resident Populations (CURP) that were released in 2019, and the 2018 Subnational Population Estimates by Statistics New Zealand, also released in 2019. The comparisons are made for all sources for June 2018, and for the University of Waikato 2013-base projections and the Subnational Population Estimates for June 2019.

**Definitions and Caveats**

There are several important caveats to these comparisons.

1. The **Census Usually Resident Populations (CURP)** excludes any adjustment for net Census undercount, and is as at March of 2018, so is likely an underestimate compared with the estimates and projections, which include all of the usually resident population, and are based on 30 June dates.
2. The **Subnational Population Estimates** are still based on the 2013 Census, and have not been adjusted for data from the 2018 Census as yet – these adjustments will be made in the data released in March 2020.[[1]](#footnote-1) The Population Estimates are therefore not independent on the Statistics New Zealand Population Projections released in 2017, as they use similar methodologies and the same base population. [[2]](#footnote-2)
3. The **University of Waikato projections for Waitomo and Taupo Districts are not for the whole territorial authority areas,** but only for those parts that are included in the Waikato Region, and so they will be underestimates relative to the whole territorial authority populations.

**Comparison of Projections and Estimates**

The data used for the comparisons for June 2018 are presented in Table 1 below, and corresponding comparison for June 2019 are presented in Table 2. The June 2018 comparisons are graphically displayed in Figures 1-10. Each figure uses the same format, with each set of projections displayed as a column for the medium variant projection, and error bars to show the high and low projections. The bottom of the error bar shows the corresponding low projection, while the top of the error bar shows the corresponding high projection.

It would be easy to over-interpret these comparisons as demonstrating the accuracy, or otherwise, of a given set of projections. It is notable that the projections do not differ greatly. The projections that have been released more recently are generally higher, and closer to the subsequently released population estimates and CURPs. This is to be expected, because more recently released projections can incorporate more recent information, particularly in terms of historically higher international migration flows. Those high migration flows were not known (and could not have been predicted) at the time the earlier projections were generated. The period of high migration has continued after all projections compared here were released.

Moreover, the University of Waikato projections included substantial input from end users, which is not a feature of other projections. We consider this to be an important component of the projection methodology, especially in the development of small area (e.g. SA2) projections.

Finally, it is worth noting that at the time the University of Waikato projections were released in 2016, the conversations with end-users at that time indicated a consensus that the projections were too high.

*Table 1: Comparison of Population Projections and Estimates, June 2018*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Stats NZ (released 2015)** | **UoW (released 2016)** | **Stats NZ (released 2017)** | **Census URP (released 2019)** | **Stats NZ Estimate (released 2019)** |
|  | **Low** | **Medium** | **High** | **Low** | **Medium** | **High** | **Low** | **Medium** | **High** |
| **Thames-Coromandel** | 27000 | 27600 | 28200 | 27262 | 27892 | 28538 | 28400 | 29000 | 29600 | 29895 | 30800 |
| **Hauraki** | 18450 | 18800 | 19150 | 18327 | 18725 | 19133 | 19800 | 20200 | 20600 | 20022 | 20600 |
| **Waikato** | 70500 | 71900 | 73300 | 70799 | 71954 | 73130 | 73700 | 75200 | 76700 | 75618 | 77800 |
| **Matamata-Piako** | 33300 | 34100 | 34800 | 33319 | 33754 | 34197 | 34200 | 35000 | 35700 | 34404 | 35500 |
| **Hamilton** | 160800 | 163800 | 166700 | 160161 | 162550 | 164978 | 165500 | 168700 | 171900 | 160911 | 165900 |
| **Waipa** | 50800 | 51800 | 52700 | 51368 | 52318 | 53286 | 52700 | 53900 | 55100 | 53241 | 54800 |
| **Otorohanga** | 9570 | 9810 | 10050 | 9452 | 9656 | 9865 | 10050 | 10300 | 10550 | 10104 | 10400 |
| **South Waikato** | 22700 | 23200 | 23700 | 22656 | 23035 | 23422 | 23500 | 24000 | 24500 | 24042 | 24800 |
| **Waitomo** | 8980 | 9220 | 9460 | 8889 | 9054 | 9222 | 9580 | 9830 | 10050 | 9303 | 9570 |
| **Taupo** | 35000 | 35700 | 36400 | 35300 | 35793 | 36295 | 36500 | 37200 | 38000 | 37203 | 38300 |

*Table 2: Comparison of Population Projections and Estimates, June 2019*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Stats NZ (released 2015)** | **UoW (released 2016)** | **Stats NZ (released 2017)** | **Census URP (released 2019)** | **Stats NZ Estimate (released 2019)** |
|  | **Low** | **Medium** | **High** | **Low** | **Medium** | **High** | **Low** | **Medium** | **High** |
| **Thames-Coromandel** | N/A | N/A | N/A | 27282 | 28036 | 28813 | N/A | N/A | N/A | N/A | 31500 |
| **Hauraki** | N/A | N/A | N/A | 18318 | 18793 | 19281 | N/A | N/A | N/A | N/A | 21000 |
| **Waikato** | N/A | N/A | N/A | 71709 | 73124 | 74568 | N/A | N/A | N/A | N/A | 79900 |
| **Matamata-Piako** | N/A | N/A | N/A | 33448 | 33972 | 34506 | N/A | N/A | N/A | N/A | 36000 |
| **Hamilton** | N/A | N/A | N/A | 162338 | 165234 | 168188 | N/A | N/A | N/A | N/A | 169500 |
| **Waipa** | N/A | N/A | N/A | 52015 | 53170 | 54353 | N/A | N/A | N/A | N/A | 56200 |
| **Otorohanga** | N/A | N/A | N/A | 9446 | 9689 | 9939 | N/A | N/A | N/A | N/A | 10500 |
| **South Waikato** | N/A | N/A | N/A | 22595 | 23046 | 23509 | N/A | N/A | N/A | N/A | 25100 |
| **Waitomo** | N/A | N/A | N/A | 8820 | 9015 | 9215 | N/A | N/A | N/A | N/A | 9490 |
| **Taupo** | N/A | N/A | N/A | 35448 | 36041 | 36646 | N/A | N/A | N/A | N/A | 39300 |

*Figure 1: Comparison of Population Projections and Estimates, Thames-Coromandel District, 2018*



*Figure 2: Comparison of Population Projections and Estimates, Hauraki District, 2018*



*Figure 3: Comparison of Population Projections and Estimates, Waikato District, 2018*



*Figure 4: Comparison of Population Projections and Estimates, Matamata-Piako District, 2018*



*Figure 5: Comparison of Population Projections and Estimates, Hamilton City, 2018*



*Figure 6: Comparison of Population Projections and Estimates, Waipa District, 2018*



*Figure 7: Comparison of Population Projections and Estimates, Otorohanga District, 2018*



*Figure 8: Comparison of Population Projections and Estimates, South Waikato District, 2018*



*Figure 9: Comparison of Population Projections and Estimates, Waitomo District, 2018*



*Figure 10: Comparison of Population Projections and Estimates, Taupo District, 2018*



1. We will be able to update this note once the 2018-base subnational population estimates are released in March 2020. [↑](#footnote-ref-1)
2. For more information on Stats NZ Subnational Population Estimates, see see [www.stats.govt.nz/information-releases/subnational-population-estimates-at-30-june-2019-provisional](http://www.stats.govt.nz/information-releases/subnational-population-estimates-at-30-june-2019-provisional) [↑](#footnote-ref-2)