

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

Michael Cameron, University of Waikato, October 2020

Introduction

This document briefly compares three sets of population projections for territorial authorities in the Waikato Region, and the Waikato Region as a whole:

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 Subnational Population Estimates by Statistics New Zealand, released in 2019, and the revised 2018 Subnational Population Estimates, released in 2020. 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. Revised University of Waikato 2013-base projections produced in 2020 for Hamilton City, Waikato District, and Waipa District are not included, as those projections were calibrated to the original Subnational Population Estimates. These comparisons update those made in an earlier document dated January 2020, prior to the release of the revised Subnational Population Estimates.

Definitions and Caveats

There are two important caveats to these comparisons. First, the original **Subnational Population Estimates** were based on the 2013 Census, and had not been adjusted for data from the 2018 Census. The Population Estimates are therefore not independent of the Statistics New Zealand Population Projections released in 2017, as they use similar methodologies and the same base population. Second, 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 comparisons for June 2019 are presented in Table 2. The June 2018 comparisons are graphically displayed in Figures 1-11. 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. This is to be expected, because more recently-released projections are able to 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 of the 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 projections 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)			Stats NZ Estimate (released 2019)	Stats NZ Estimate (revised 2020)
	Low	Medium	High	Low	Medium	High	Low	Medium	High		
Thames-Coromandel	27000	27600	28200	27262	27892	28538	28400	29000	29600	30800	30700
Hauraki	18450	18800	19150	18327	18725	19133	19800	20200	20600	20600	20700
Waikato	70500	71900	73300	70799	71954	73130	73700	75200	76700	77800	78200
Matamata-Piako	33300	34100	34800	33319	33754	34197	34200	35000	35700	35500	35300
Hamilton	160800	163800	166700	160161	162550	164978	165500	168700	171900	165900	168600
Waipa	50800	51800	52700	51368	52318	53286	52700	53900	55100	54800	55000
Otorohanga	9570	9810	10050	9452	9656	9865	10050	10300	10550	10400	10500
South Waikato	22700	23200	23700	22656	23035	23422	23500	24000	24500	24800	24800
Waitomo	8980	9220	9460	8889	9054	9222	9580	9830	10050	9570	9630
Taupo	35000	35700	36400	35300	35793	36295	36500	37200	38000	38300	38600
Waikato Region	440700	449500	458200	437533	444732	452067	457700	467200	476600	472100	475600

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

	Stats NZ (released 2015)			UoW (released 2016)			Stats NZ (released 2017)			Stats NZ Estimate (released 2019)	Stats NZ Estimate (revised 2020)
	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	31500	31300
Hauraki	N/A	N/A	N/A	18318	18793	19281	N/A	N/A	N/A	21000	21000
Waikato	N/A	N/A	N/A	71709	73124	74568	N/A	N/A	N/A	79900	80400
Matamata-Piako	N/A	N/A	N/A	33448	33972	34506	N/A	N/A	N/A	36000	35800
Hamilton	N/A	N/A	N/A	162338	165234	168188	N/A	N/A	N/A	169500	172300
Waipa	N/A	N/A	N/A	52015	53170	54353	N/A	N/A	N/A	56200	56300
Otorohanga	N/A	N/A	N/A	9446	9689	9939	N/A	N/A	N/A	10500	10600
South Waikato	N/A	N/A	N/A	22595	23046	23509	N/A	N/A	N/A	25100	25100
Waitomo	N/A	N/A	N/A	8820	9015	9215	N/A	N/A	N/A	9490	9650
Taupo	N/A	N/A	N/A	35448	36041	36646	N/A	N/A	N/A	39300	39300
Waikato Region	N/A	N/A	N/A	441421	450120	459017	N/A	N/A	N/A	482100	485300

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

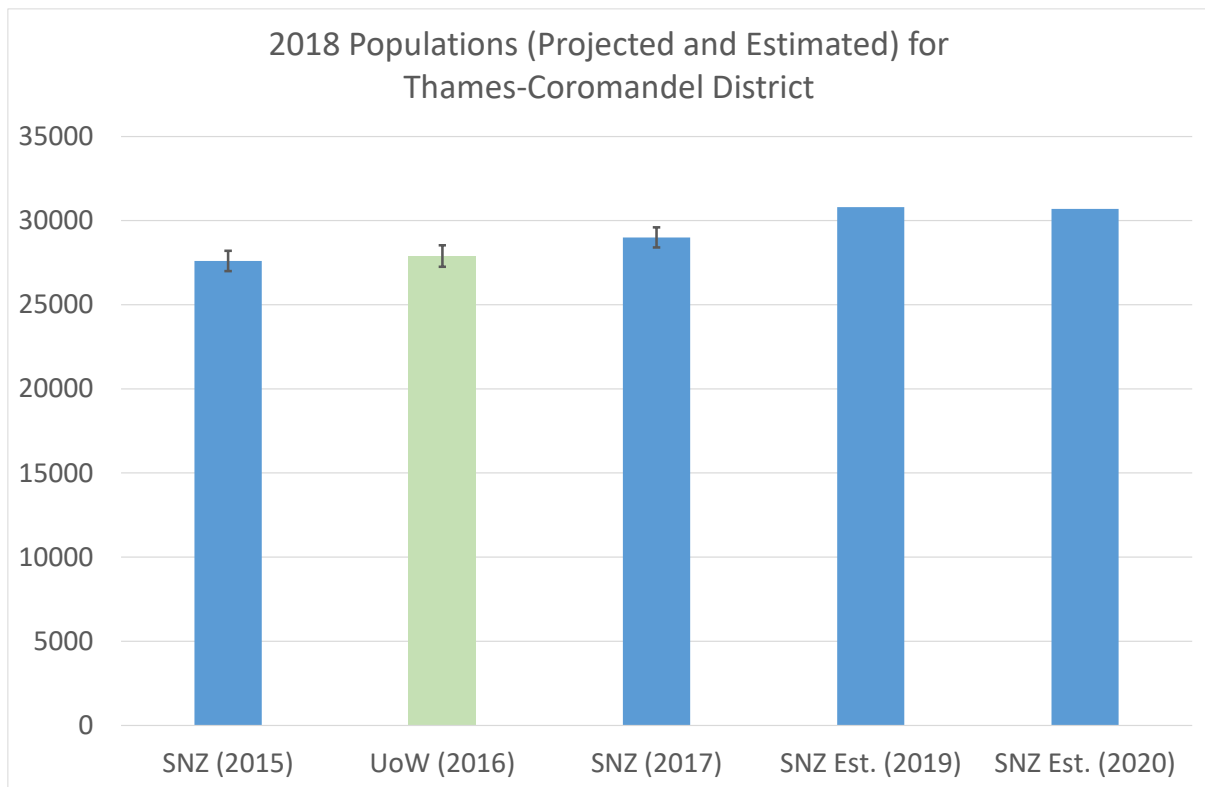


Figure 2: Comparison of Population Projections and Estimates, Hauraki District, 2018

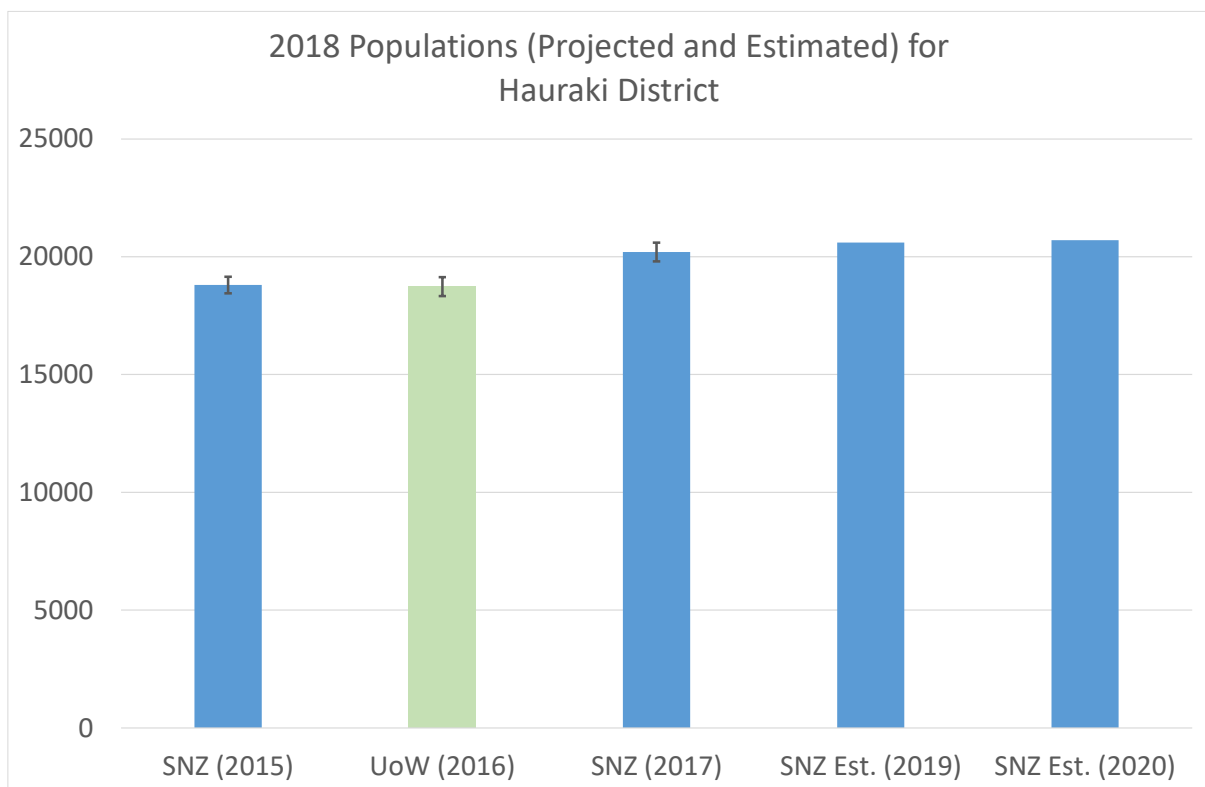


Figure 3: Comparison of Population Projections and Estimates, Waikato District, 2018

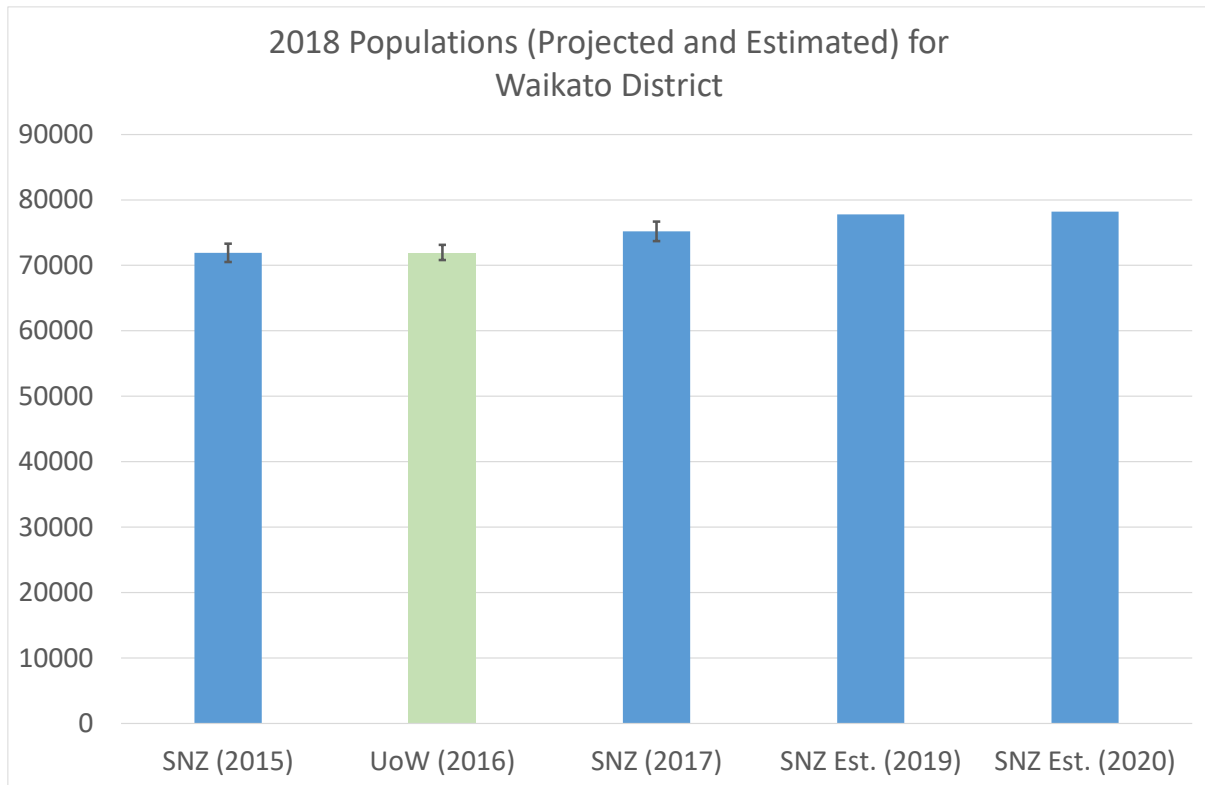


Figure 4: Comparison of Population Projections and Estimates, Matamata-Piako District, 2018

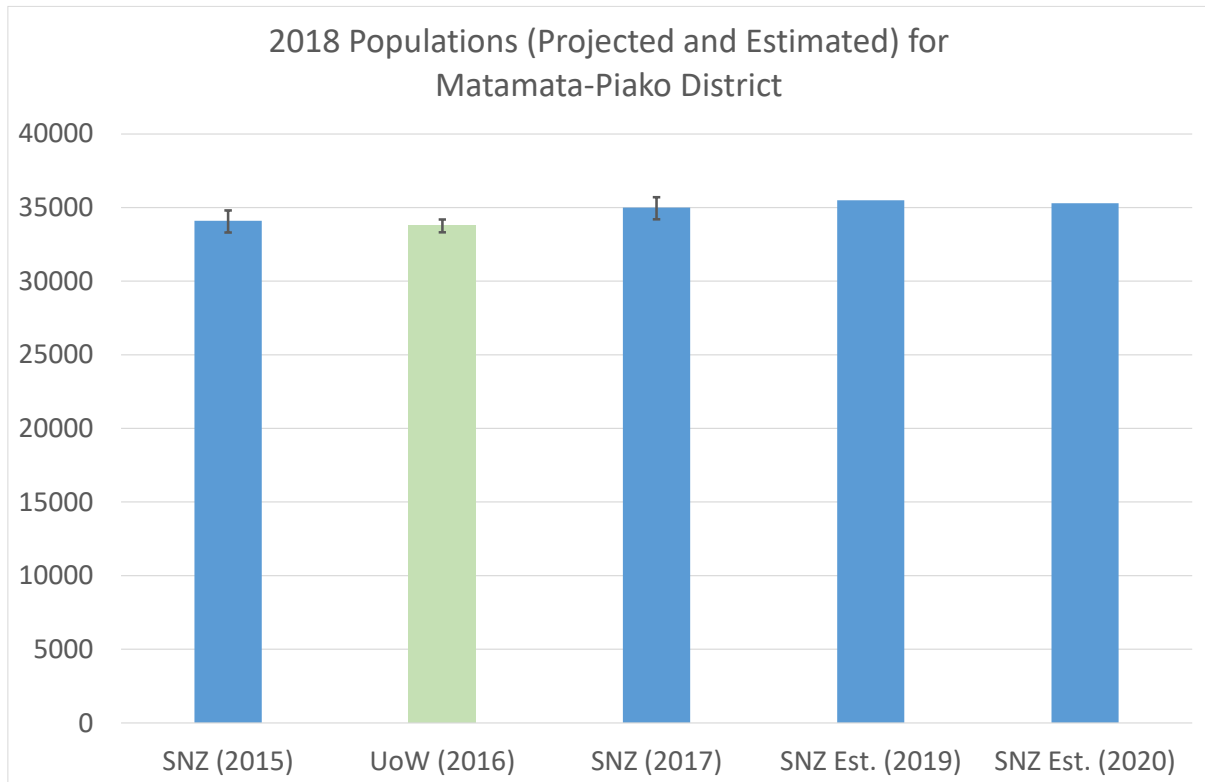


Figure 5: Comparison of Population Projections and Estimates, Hamilton City, 2018

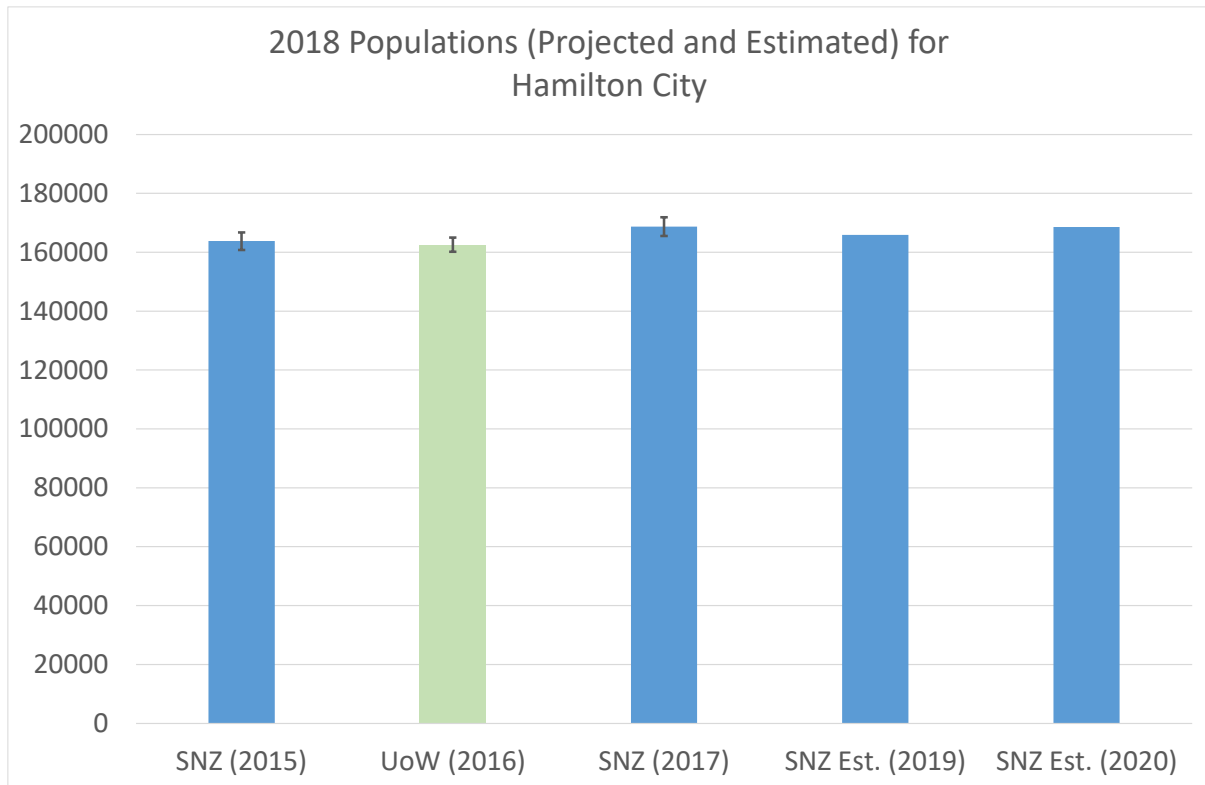


Figure 6: Comparison of Population Projections and Estimates, Waipa District, 2018

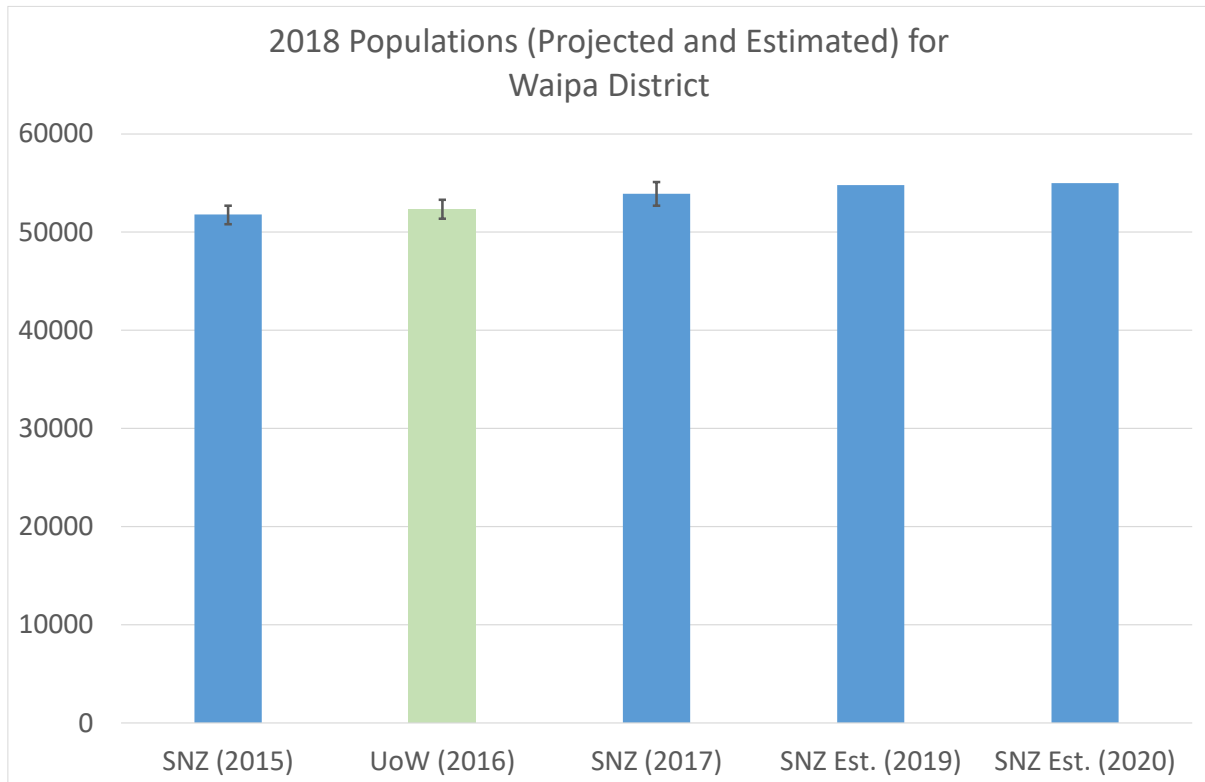


Figure 7: Comparison of Population Projections and Estimates, Otorohanga District, 2018

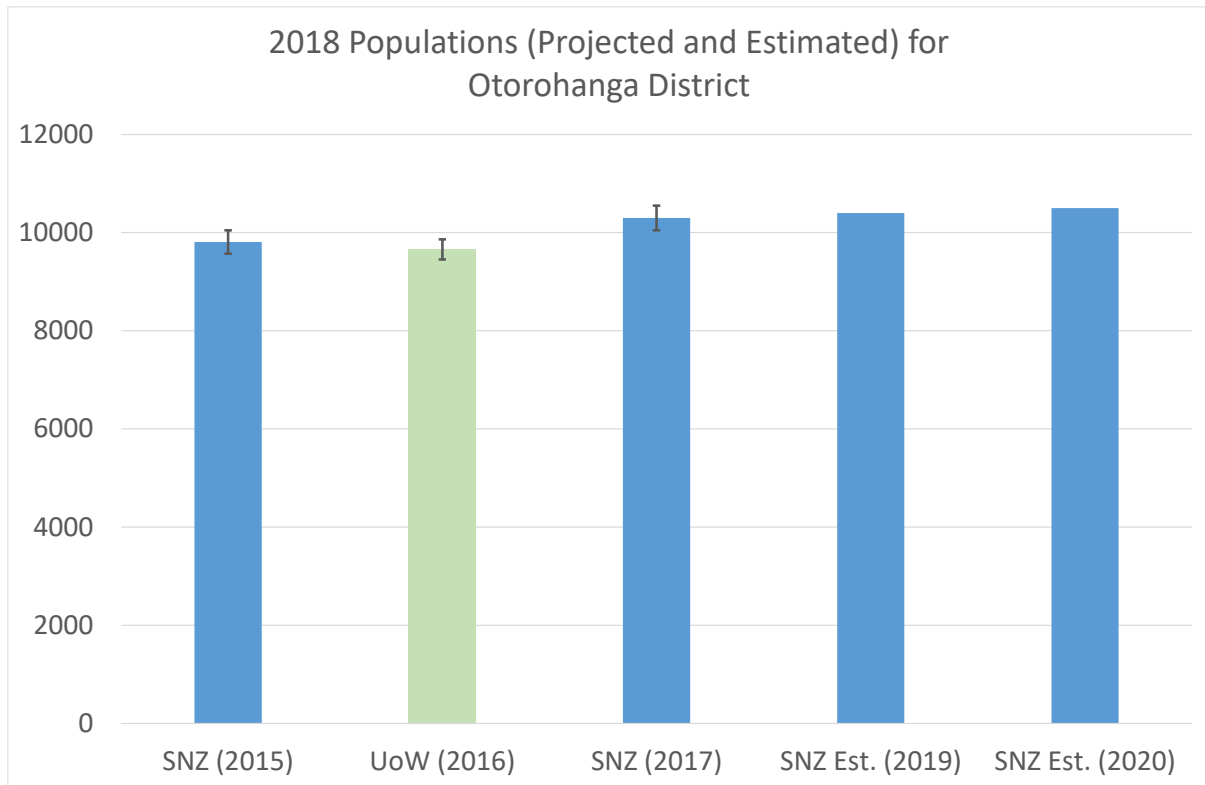


Figure 8: Comparison of Population Projections and Estimates, South Waikato District, 2018

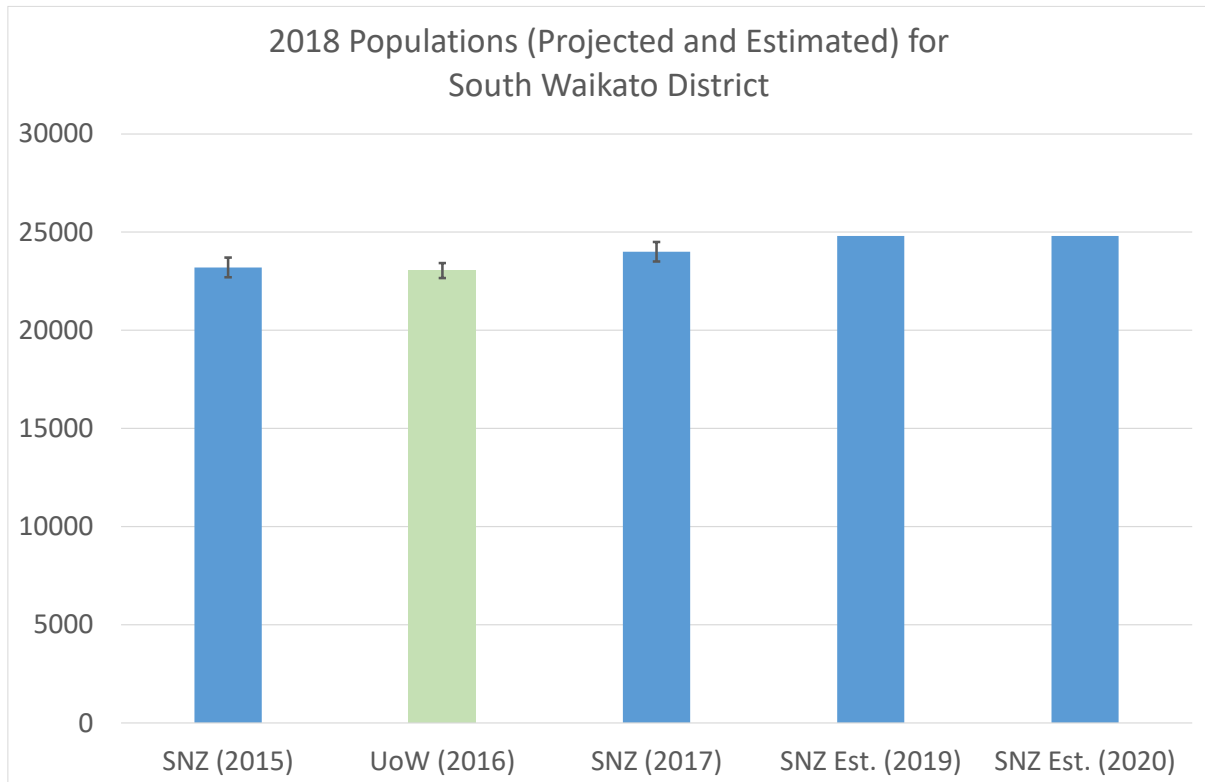


Figure 9: Comparison of Population Projections and Estimates, Waitomo District, 2018

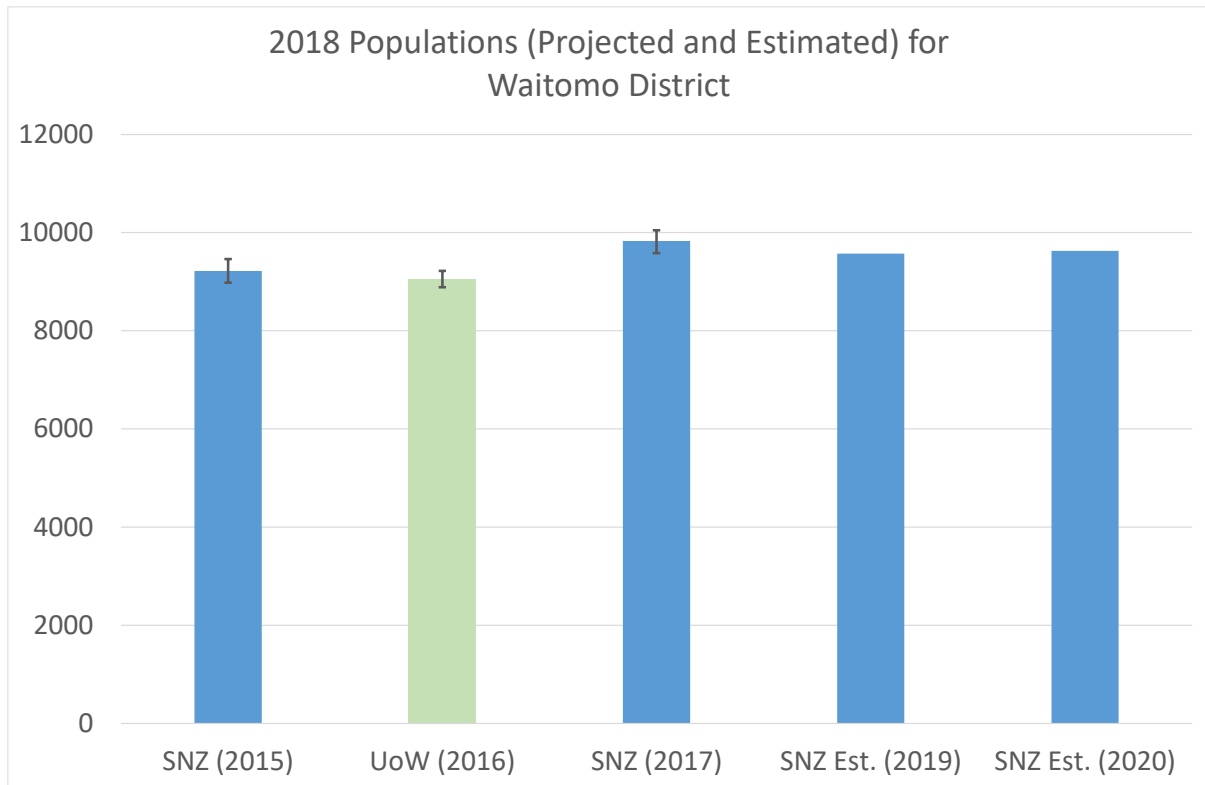


Figure 10: Comparison of Population Projections and Estimates, Taupo District, 2018

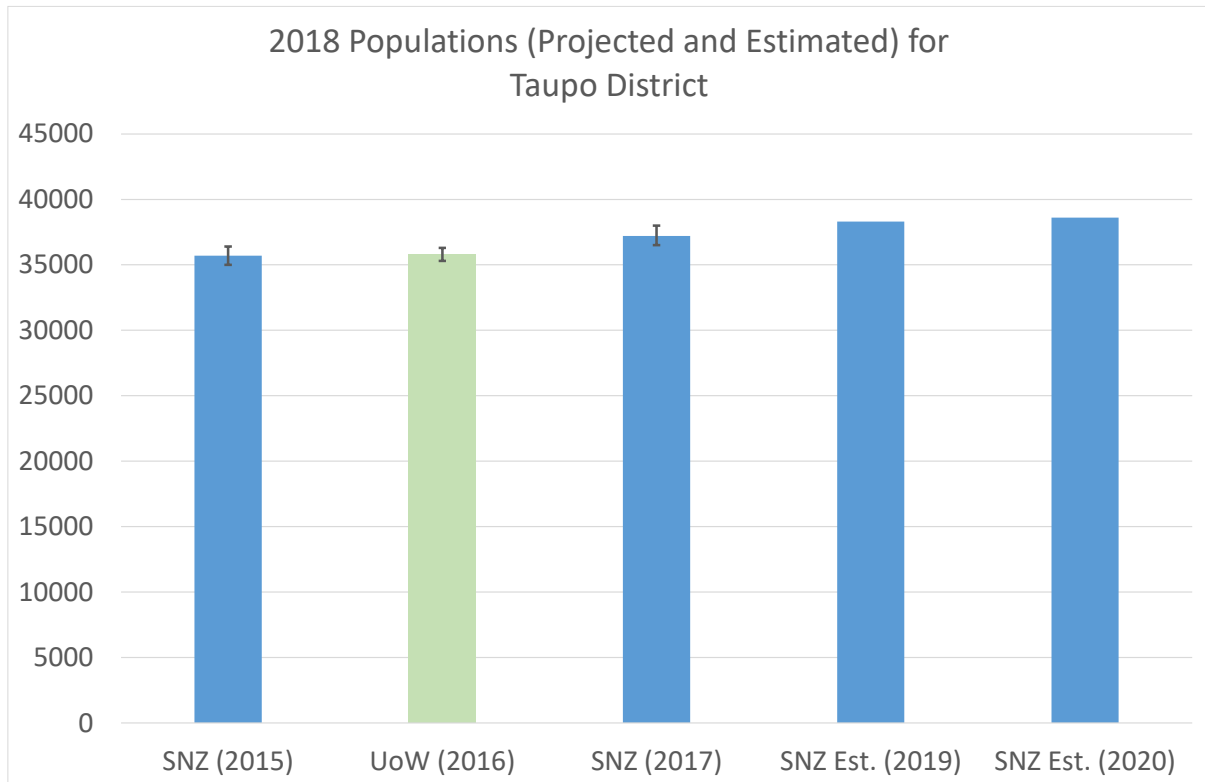


Figure 11: Comparison of Population Projections and Estimates, Waikato Region, 2018

