

SmartGrowth

Building our futures together

Comparison of Statistics NZ and NIDEA Demographic Data

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1 Purpose

This report presents an explanation and a comparison of two sets of population / demographic projections and seeks to identify any new risks arising from the data and suggests associated mitigations.

The information presented is the most current to hand, as at July 2015, and takes into consideration the NIDEA Report (2014) and the latest projections from Statistic NZ (2015)

The report

- Presents the overall western Bay of Plenty population's projections
- Outlines the differing projections of age related demographics
- Provides a broad outline of the future planning considerations that may be impacted should the present projections be changed

2 Background

2.1 SmartGrowth – An overview

SmartGrowth is a joint initiative between Western Bay of Plenty District Council (WBOPDC), Tauranga City Council (TCC), Bay of Plenty Regional Council (BOPRC) and tangata whenua, working together with the New Zealand Transport Authority to take a cohesive, long-term approach to managing growth and plan for the infrastructure required to support it. SmartGrowth was initiated in the late 1990's as a cohesive sub-regional response to pressures of high growth on land, the natural and cultural environment, infrastructure, facilities and relationships across the western Bay of Plenty.

SmartGrowth 2004 was primarily a growth management strategy for the western Bay of Plenty sub-region, focused on making provision for sustainable urban and rural development, specifically for the next 20 years and generally for the next 50 years.

The strategy was updated in 2012/13 to ensure the information base remained sound and the long-term plan kept current. The 2013 update comprehensively considered the strategic direction, issues, principles and actions. As a result of the update, the 2013 strategy has broadened from a growth management plan into an integrated, long-term strategy which sets the strategic vision and direction for the growth.

3 Population data

The history and rationale of the population data used for the SmartGrowth Strategy 2013 (SGS13) can be found here:

http://www.smartgrowthbop.org.nz/media/46663/growth_management_-_role_of_demographic_projection.pdf

3.1 **New information since SmartGrowth Strategy 2013 (SGS13)**

There have been two reports released of population data and projections since the SGS13:

- The National Institute of Demographic and Economic Analysis (NIDEA) report data projected to 2063 based on 2006 census data (<http://www.smartgrowthbop.org.nz/media/74295/2014bopreviewappendicesfinal20may.pdf>)
- The Statistics NZ data, released at the end of Feb 2015, which covers the period 2014-2043 projections were based on the 2013 Census data (<http://www.smartgrowthbop.org.nz/media/75858/sub-national-population-projections-2013base-tables.pdf>).

These different starting figures (2013) have led to variations in the projections and the difference in the end dates of the projections (2043 and 2063) have led to the need to for SmartGrowth to re-establish the data used for our advice and planning.

The revised NZ Stat population estimate for TC is 119,800 people as at 30 June 2013, 2,520 people more than the NIDEA June 2013 base of 117,280. The new Stats NZ estimates for Western Bay District is slightly lower (NIDEA 46,110, Stats NZ 45,500).

3.2 **Methodology of the two different data sets.**

3.2.1 **Statistics New Zealand**

- The subnational population projections provided my Statistics New Zealand give an indication of the future population usually living in territorial authority areas.
- The projections are based on the data captured by the 2013 census.
- The three projections provided (low, medium, and high growth) incorporate different fertility, mortality, and migration assumptions for each geographic area have been produced to illustrate a range of possible scenarios.
- At the time of release, Statistics NZ considers the medium projection suitable for assessing future population changes. The medium series is consistent with the median projection (50th percentile) of the National Population Projections: 2014(base)–2068 (released November 2014).
- However Statistics NZ advises that users of the data can make their own judgement as to which projections are most suitable for their purposes.
- These projections are not predictions. The projections should be used as an indication of the overall trend, rather than as exact forecasts. The projections are updated every 2–3 years to maintain their relevance and usefulness, by incorporating new information about demographic trends and developments in methods.

Slowing population growth

Statistics NZ advise that:

- New Zealand's population growth is likely to slow in the long term, despite relatively high growth of 1.3 percent a year projected in 2014–18. Assuming an average net migration of 12,000 people a year from 2017, New Zealand's population growth is projected to average 0.8 percent a year in the decade ending 2030. Growth will average 0.6 percent a year in the decade ending 2040.
- The slowing growth is largely driven by the narrowing gap between births and deaths.
- Tauranga City is one of five territorial authority areas projected to have more children in 2043 (0.7 percent or 5,800). All five areas will gain children through net migration and an increase in births over the projection period.

3.2.2 NIDEA

- The NIDEA research provided stochastic projections, which are based on running the projection 10,000 times, each time randomising the underlying assumptions, in the process generating upper and lower projection intervals (intervals which indicate the chance of future population numbers being above or below the stated value).
- Stochastic projections generate intervals with corresponding probabilities that the projected population falls below the interval, within the interval, or above the interval.
- The sum of these three probabilities is 100% or stochastic projections, which run the projection 10,000 times, each time randomising the underlying assumptions.
- The stochastic projections provide an indication of both variability and probability, the 90 per cent projection interval for example indicating that there is only a 5 per cent chance of being above the upper bound and a 5 per cent chance that the future population will be below the lower bound.
- All projections referred to in the NIDEA report are based on Statistics New Zealand (2012) medium case (50th percentile) assumptions. At national level these are: an international net migration gain of 12,000 per year from 2015 and then remaining constant; the Total Fertility Rate falling to 1.9 births per woman by 2036 and then remaining constant; and life expectancy at birth increasing by 2061 to 88.1 and 90.5 years for males and females respectively.
- More methodology information is provided in the report proper and can be found at <http://www.smartgrowthbop.org.nz/media/74292/2014bopfinalreport20may.pdf>

3.3 Comparison Tables

3.3.1 Table 1: Comparison of Population Projections (NIDEA/Stats NZ) Tauranga

		Additional Projected Population Tauranga											
		2013	2018	2023	2028	2033	2038	2043	Total 2013 - 2043	% Increase from 2013	2053	2063	Total 2013 - 2063
Statistics New Zealand (February 2015 update)	High	119,800	12,300	12,200	12,400	12,500	12,400	12,600	74,400	62.1%	N/A	N/A	
	Medium		9,400	8,900	8,800	8,700	8,400	8,100	52,300	43.7%	N/A	N/A	
	Low		6,500	5,500	5,300	4,900	4,400	4,000	30,600	25.5%	N/A	N/A	
SmartGrowth 2014 Projection (NIDEA)		117,280	9,580	11,520	11,776	11,409	9,864	7,344	61,493	52.4%	9,330	7,749	78,572

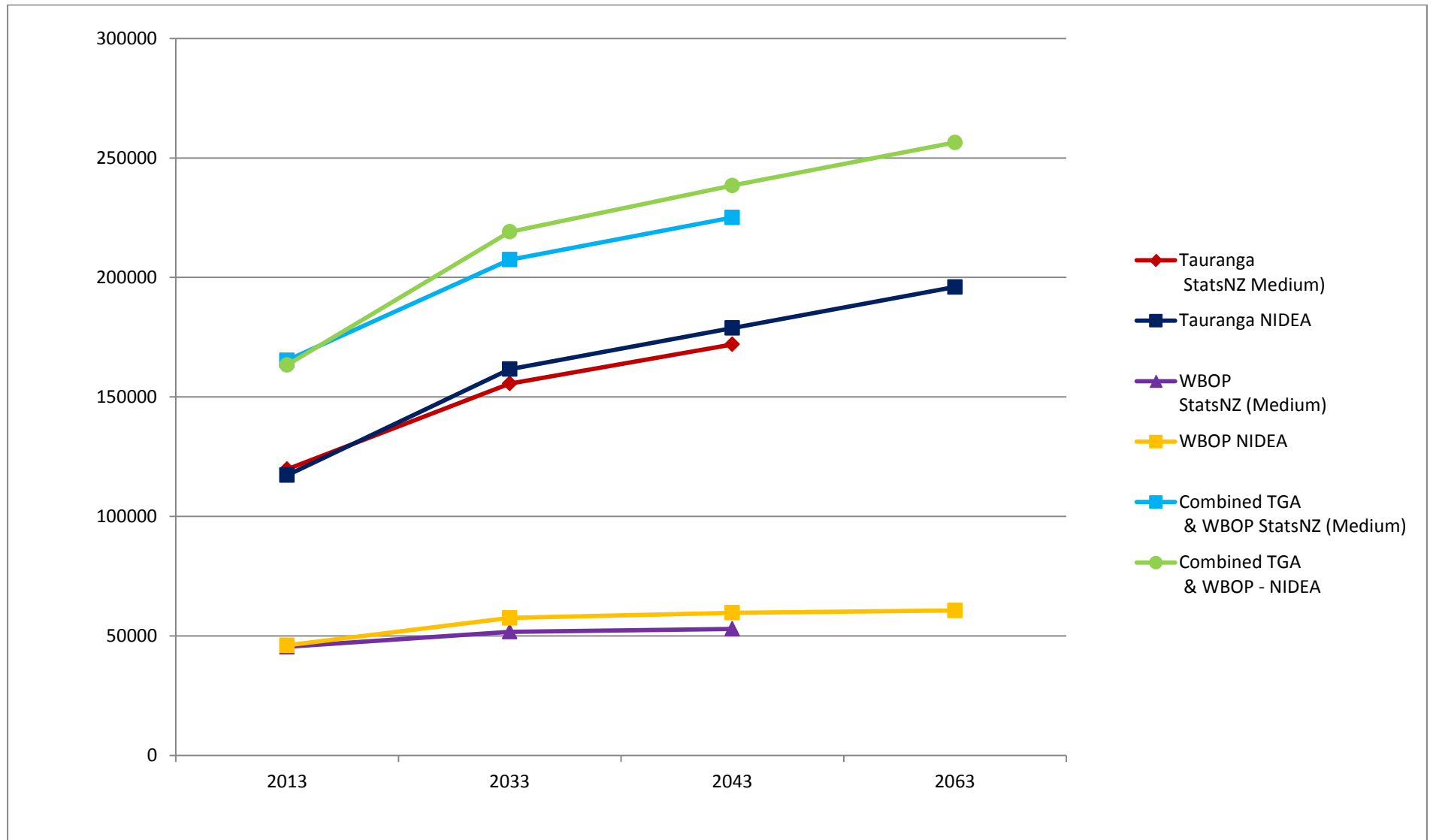
3.3.2 Table 2: Comparison of Population Projections (NIDEA/Stats NZ) Western BOP

		Additional Projected Population Western BOP											
		2013	2018	2023	2028	2033	2038	2043	Total 2013-2043	% Increase from 2013	2053	2063	Total 2013 - 2063
Statistics New Zealand (February 2015 update)	High	45,500	3,400	2,800	2,800	2,500	2,300	2,000	15,800	34.7%	N/A	N/A	
	Medium		2,200	1,600	1,400	1,100	700	500	7,500	16.5%	N/A	N/A	
	Low		1,100	300	0	-300	-700	-1100	-700	-1.5%	N/A	N/A	
SmartGrowth 2014 Projection (NIDEA)		46,110	2,748	3,160	2,986	2,512	1,567	596	13,569	29.4%	483	444	14,496

3.3.3 Table 3: Comparison of Population Projections (NIDEA/Stats NZ) Western BOP Sub-region

		Additional Projected Population Combined											
		2013	2018	2023	2028	2033	2038	2043	Total 2013-2043	% Increase from 2013	2053	2063	Total 2013 - 2063
Statistics New Zealand (February 2015 update)	High	165,300	15,700	15,000	15,200	15,000	14,700	14,600	90,200	54.6%	N/A	N/A	
	Medium		11,600	10,500	10,200	9,800	9,100	8,600	59,800	36.2%	N/A	N/A	
	Low		7,600	5,800	5,300	4,600	3,700	2,900	29,900	18.1%	N/A	N/A	
SmartGrowth 2014 Projection (NIDEA)		163,390	12,328	14,680	14,762	13,921	11,431	7,940	75,062	45.9%	9,813	8,193	93,068

3.3.4 Comparison of Population Projections (NIDEA/Stats NZ) Western BOP Sub-region



3.3.5 Observations

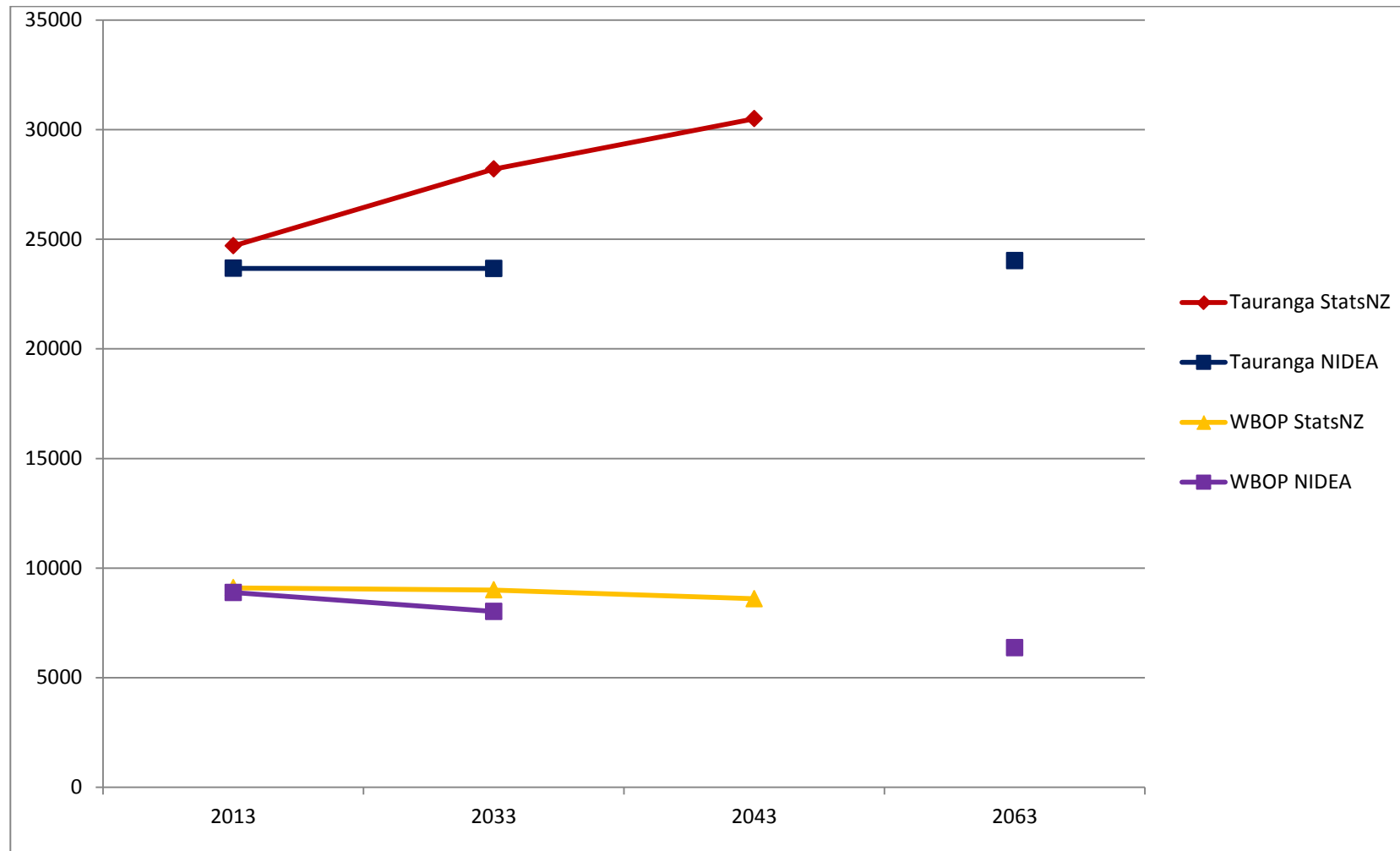
- Stats NZ is the most recent data their projections extrapolates out to 2043 whereas the NIDEA report provides projections to 2063.
- All the NIDEA projections fall approximately half way between the medium and high Stats NZ projections.
- Both sets of data are showing a similar trends on overall population growth (note: it is the age demographics of the population that differs; see below)
- The current SmartGrowth position is the NIDEA data is the reference for demographic projection.

4 Comparison of age demographics

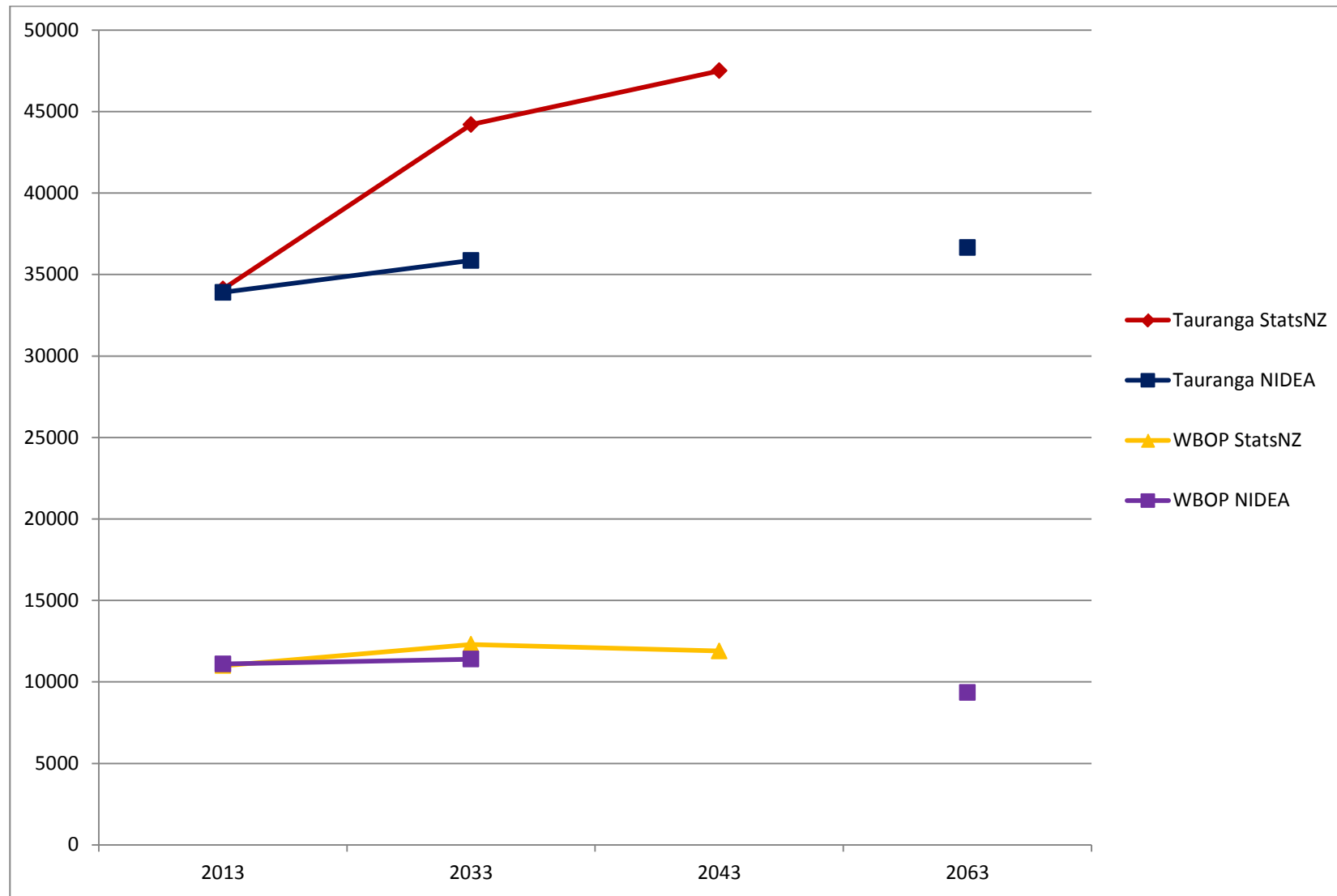
4.1 Table 4: Comparison of age demographics projections (NIDEA/Stats NZ) Tauranga and Western BOP

Tauranga	2013	2033	% Increase from 2013	2043	% Increase from 2013	2063	% Increase from 2013	Western BOP	2013	2033	% Increase from 2013	2043	% Increase from 2013	2063	% Increase from 2013
Aged under 15								Aged under 15							
Stats NZ	24,700	28,200	14.2	30,500	23.5	N/A		Stats NZ	9,100	9,000	-1.1	8,600	-5.5	N/A	
NIDEA	23,670	23,666	0	N/A		24,019	1.5	NIDEA	8,880	8,017	-9.7	N/A		6,360	-28.4
Aged 15 – 39yr								Aged 15 – 39yr							
Stats NZ	34,100	44,200	29.6	47,500	39.2	N/A		Stats NZ	11,000	12,300	11.8	11,900	8.2	N/A	
NIDEA	33,900	35,858	5.8	N/A		36,650	8.1	NIDEA	11,100	11,399	2.7	N/A		9,350	-15.8
Aged 40 – 64yr								Aged 40 – 64yr							
Stats NZ	38,200	43,300	13.4	47,100	23.3	N/A		Stats NZ	16,700	14,800	-11.4	15,700	-6.0	N/A	
NIDEA	36,830	47,397	28.7	N/A		51,629	40.2	NIDEA	17,120	19,306	12.8	N/A		20,026	17.0
Aged 65+								Aged 65+							
Stats NZ	22,700	40,000	76.2	46,900	106.6	N/A		Stats NZ	8,700	15,800	81.6	16,800	93.1	N/A	
NIDEA	22,880	54,725	139.1	N/A		83,715	265.9	NIDEA	9,010	18,824	108.9	N/A		24,946	176.9
Total								Total							
Stats NZ	119,800	155,600	29.9	172,000	43.6	N/A			45,500	51,800	13.8	53,000	16.5	N/A	
NIDEA	117,280	161,646	37.8	N/A		196,013	67.1		46,110	57,546	24.8	N/A		60,682	31.6

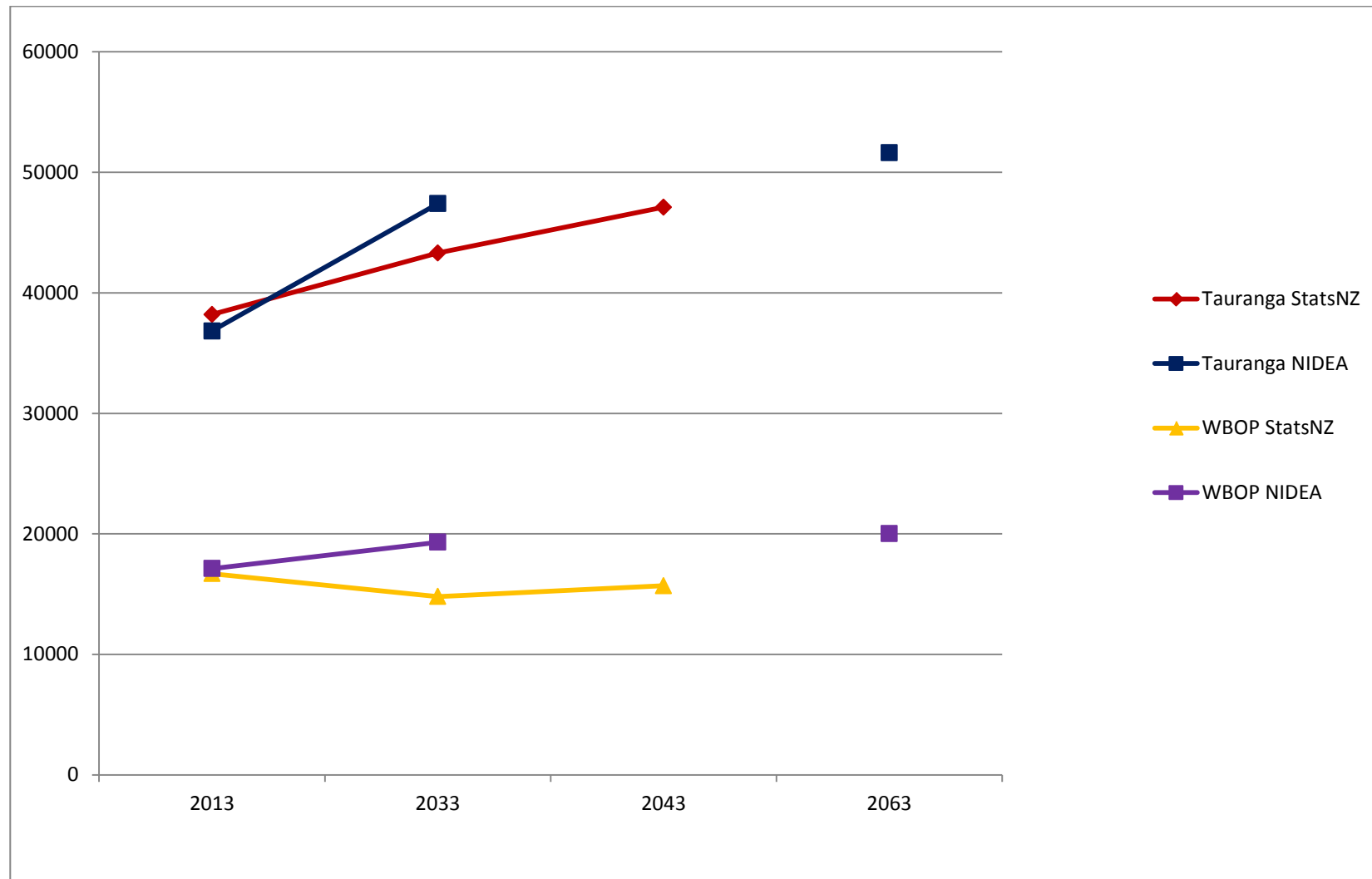
4.1.1 Age: 0-15 years - Comparison of Projections



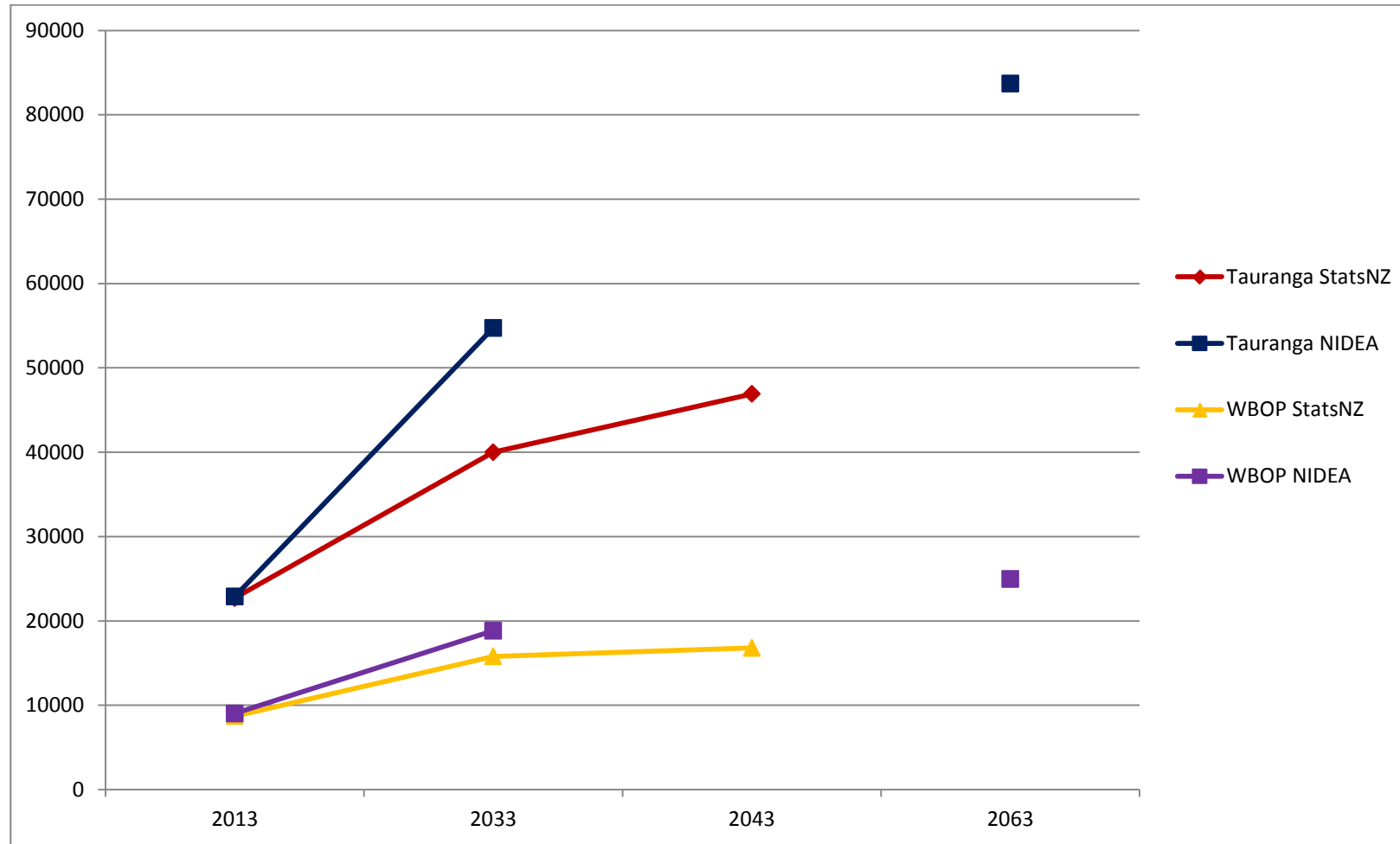
4.1.2 Age: 15-39 years - Comparison of Projections



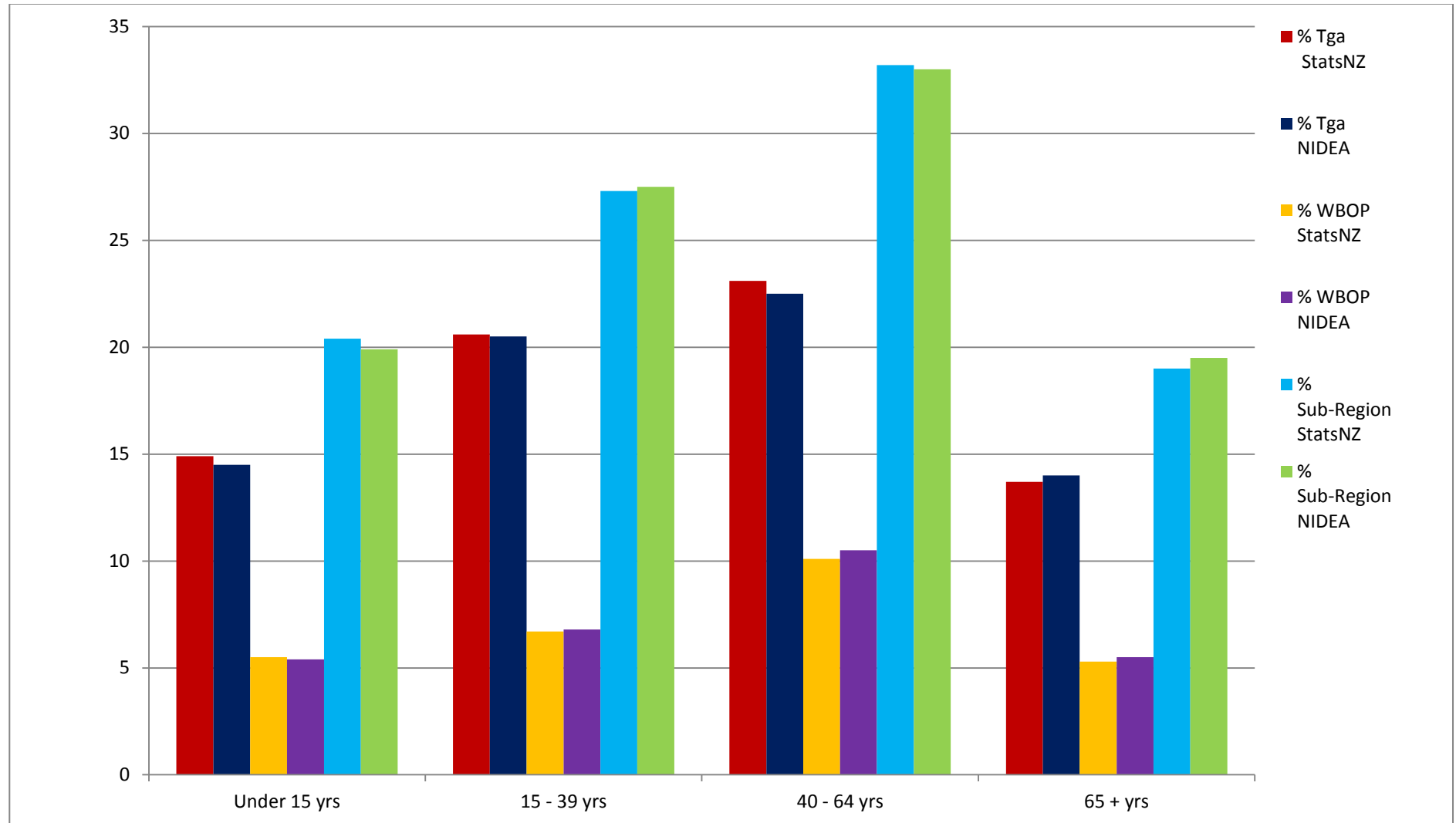
4.1.3 Age: 40 -64 years – Comparison of Projections



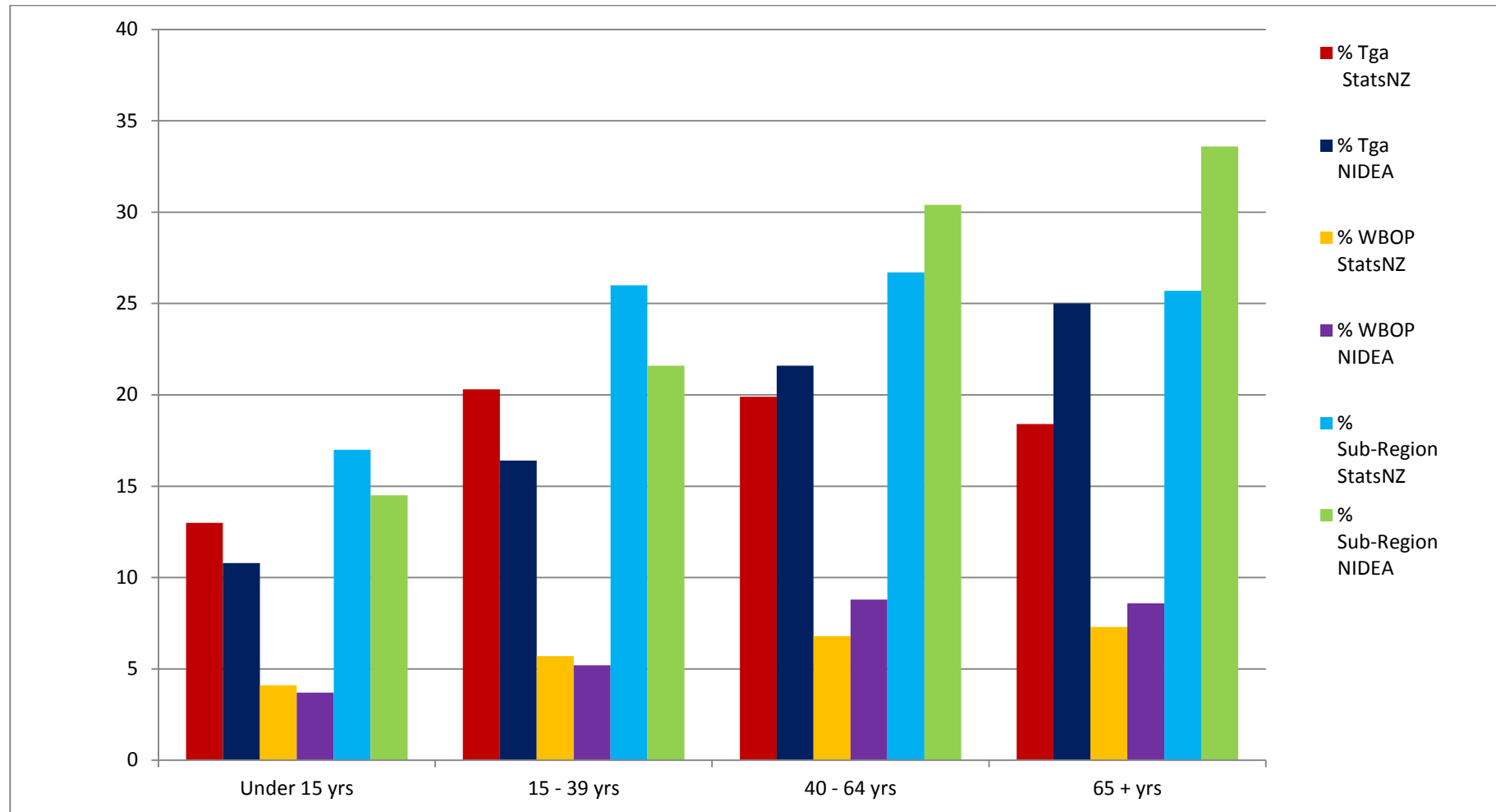
4.1.4 Age: 65+ -Comparison of Projections



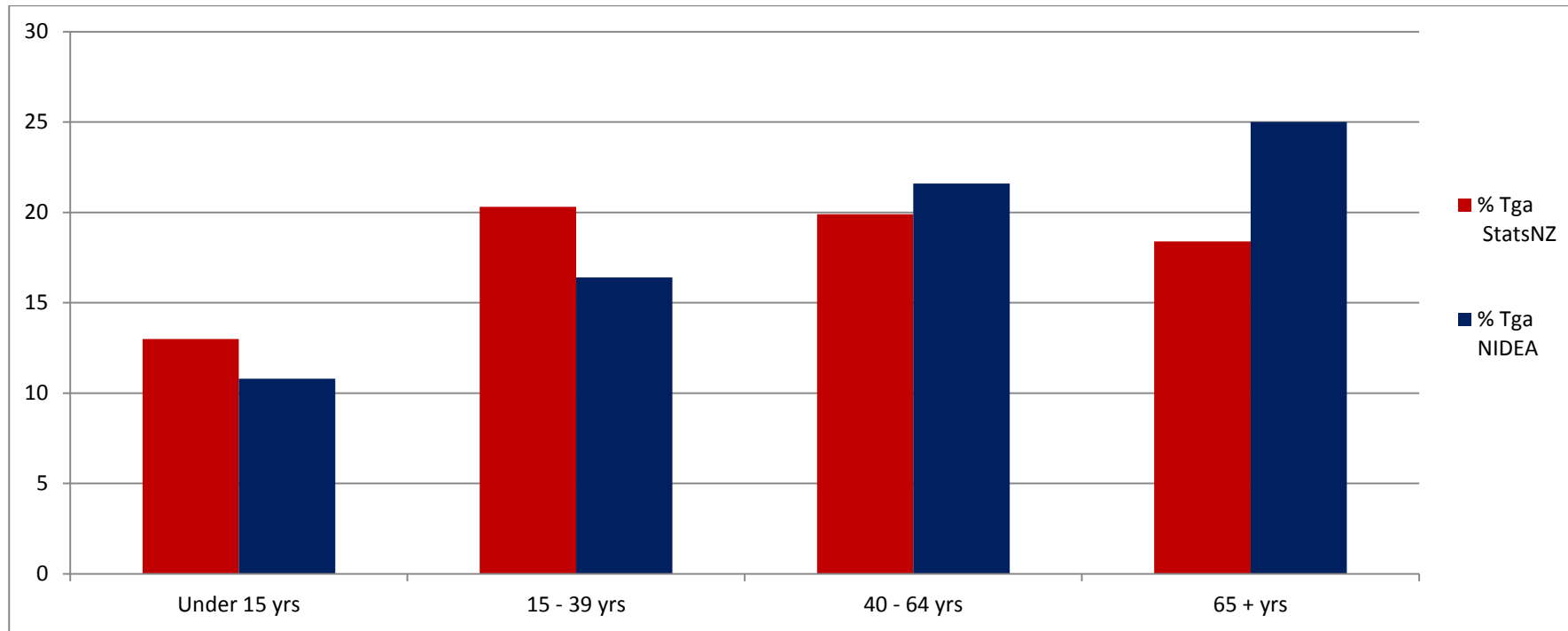
4.1.5 2013 Percentage of Sub-regional population (StatsNZ: 165,300, NIDEA: 163,390)



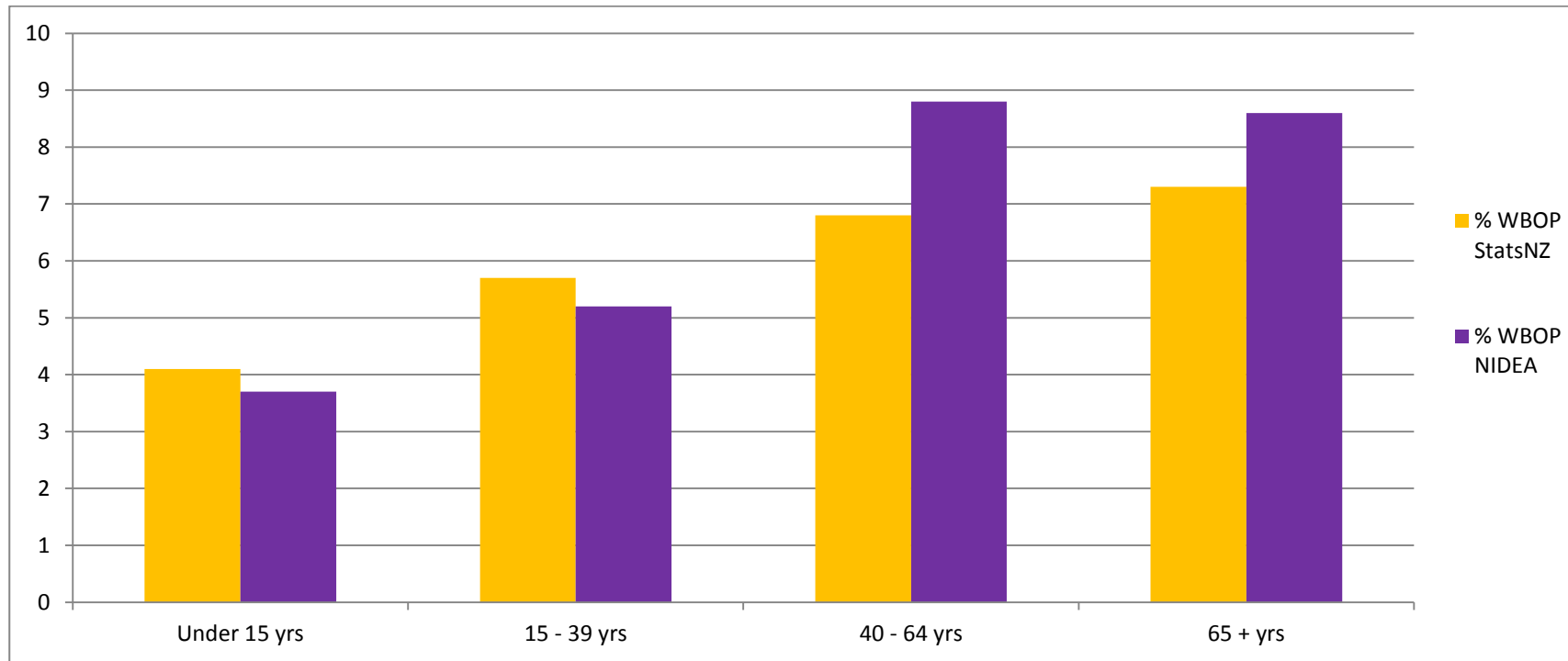
4.1.6 2033 - Percentage of projected sub-regional population (StatsNZ: 217,400, NIDEA: 219,192)



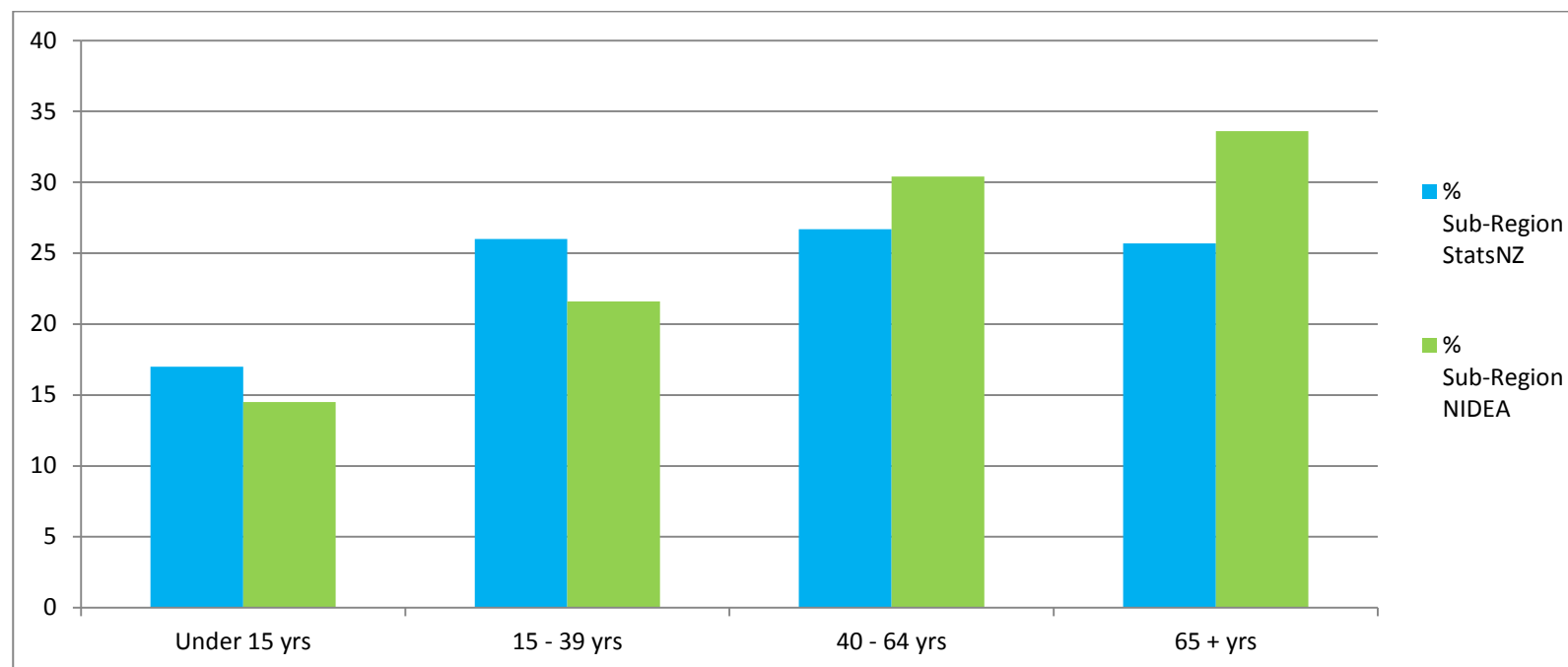
4.1.7 Tauranga age related projections 2033



4.1.8 Western BOP age related projections 2033



4.1.9 Western Bay sub-region age related projections 2033



Observations:

- In the NIDEA projection under 39's increase in Tauranga over time and decrease in WBOP but they approximately offset each other by 2063
- In the under 15s/2033/Tauranga NIDEA projection, figures are 14% lower than the Stats NZ and in the under 39s this percentage difference rises to 24%
- In both data sets for the 65+/2033 figures the NIDEA projections are substantially higher than Stats NZ; 63% difference in Tauranga and 27% in Western BOP