Population Projections

Structural Ageing and the Implications for Youth Populations in New Zealand

NZPOPCON AUGUST 2023

dotlovesdata.com

About this presentation

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Author of this work

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Prominent NZ demographer (retired). Former Director of Natalie Jackson Demographics Ltd and a Research Associate at the National Institute of Demographic and Economic Analysis (NIDEA), University of Waikato

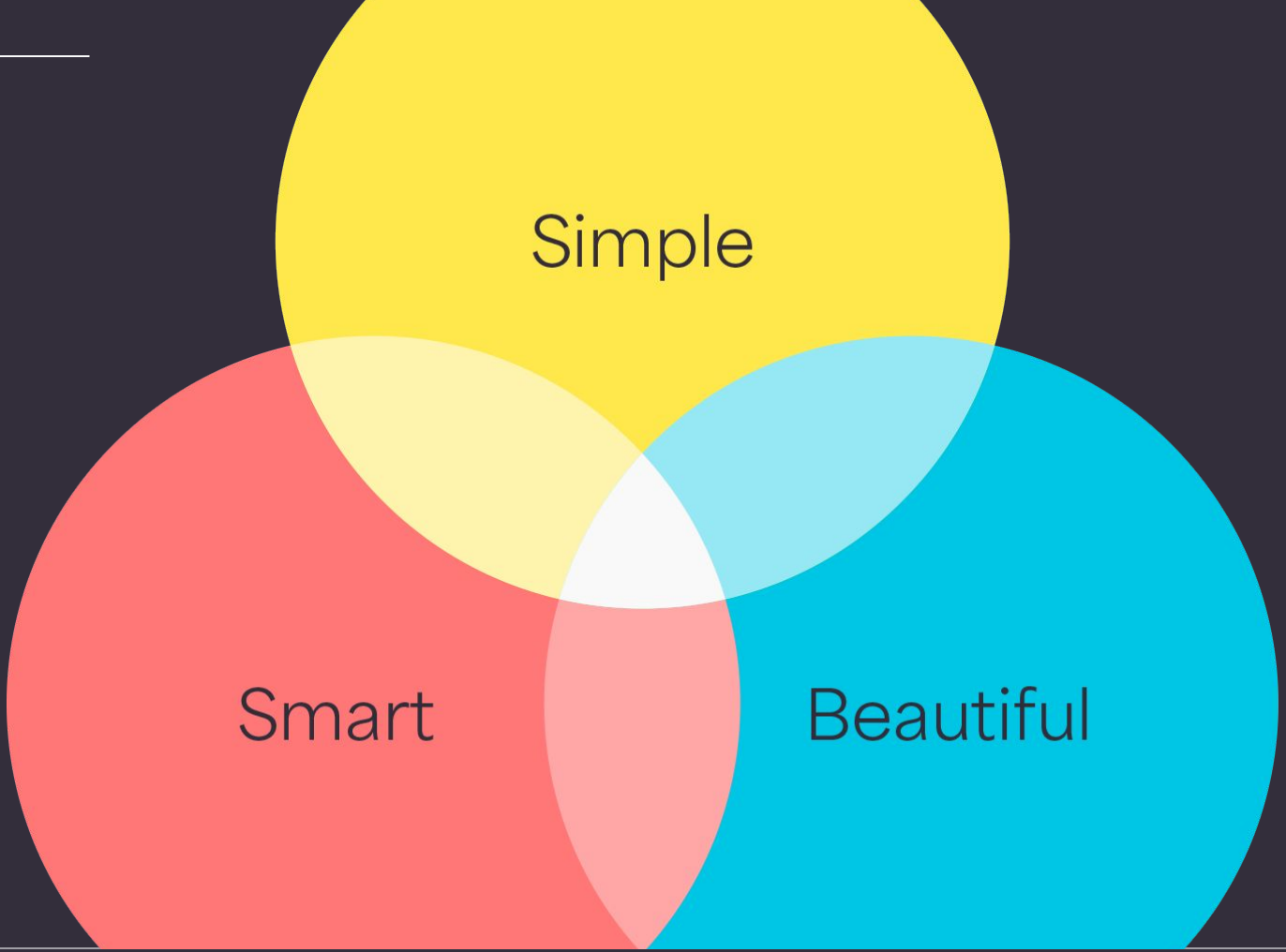
Alison's mentor

Dr. Holly Trowland

Director of Consulting at Dot Loves Data, PhD in Astrophysics from the University of Sydney

Your presenter

DOT Motto

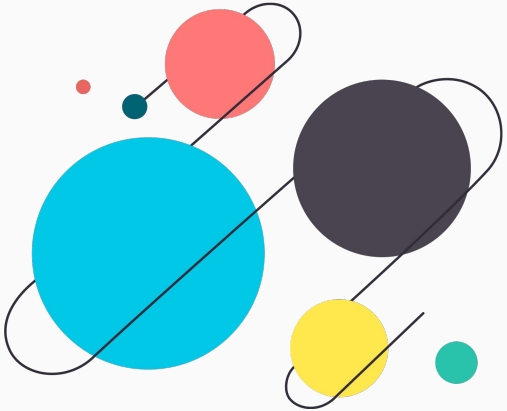


DOT loves demography: Our work

DOT works with regional councils and and territorial authorities to develop bespoke subnational population projections to aid in planning for future communities and infrastructure

We offer our clients

- area-specific assumptions and scenarios
- the ability to feedback into the assumptions underlying the projections
- a range of projection methods
- projections based on the latest data and proprietary datasets
- a range of output formats to meet specific use-case requirement



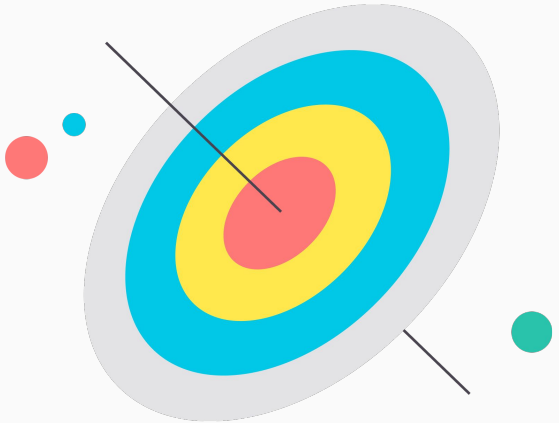
Why this talk? DOT's insights

Structural aging of the NZ population is widely understood

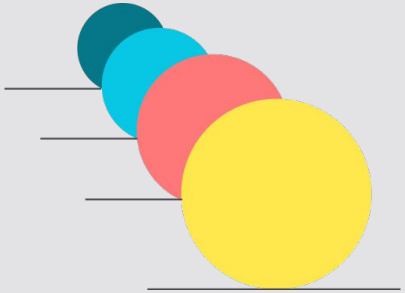
Focus is often on the older segments of the population but what are the implications for **children and youth**?

Three TAs:

- Nelson City Council
- Tasman District Council
- Queenstown Lakes District Council



Our approach



Our approach

We used the **Cohort component method (projections by age-sex).**

This is a **deterministic** approach.

Fertility and mortality assumptions are very similar to **Stats NZ.** Main differences is our approach to **migration.**

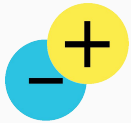
There is essentially only **3 inputs** to determining population:

Fertility:

1) Age-specific fertility rates
2) Total Fertility Rate,
3) Sex ratio at birth

Mortality:

1) Age-sex specific survivorship,
2) Life expectancy



Net migration:

1) Age-sex specific migration rates

Migration assumptions: our primary difference with Statistics NZ projection assumptions

Migration Rates

DOT's Approach

- Number of migrants generated stepwise
- More growth focussed. Migration numbers keep pace with population growth or decline

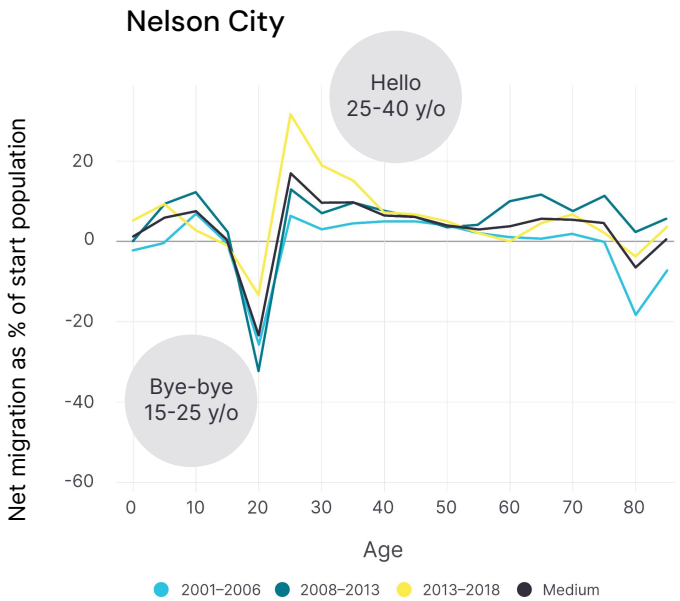
vs

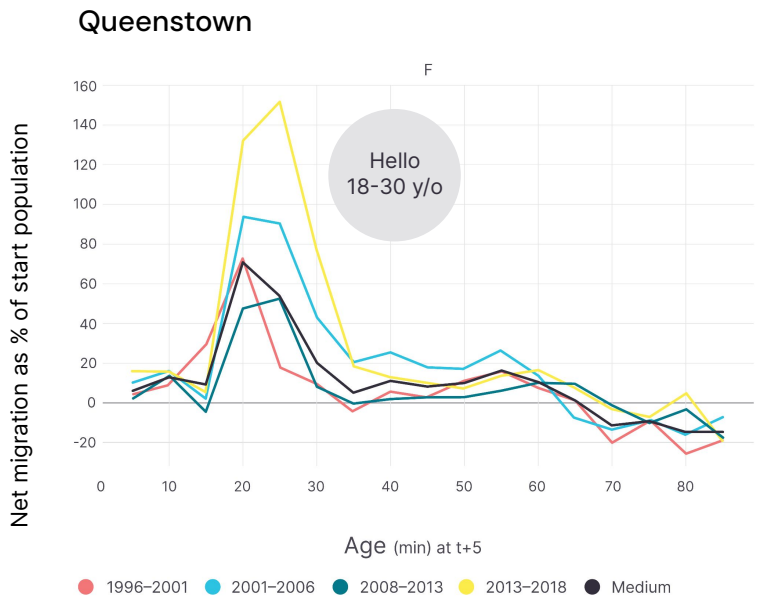
Migration Numbers

Statistics NZ approach

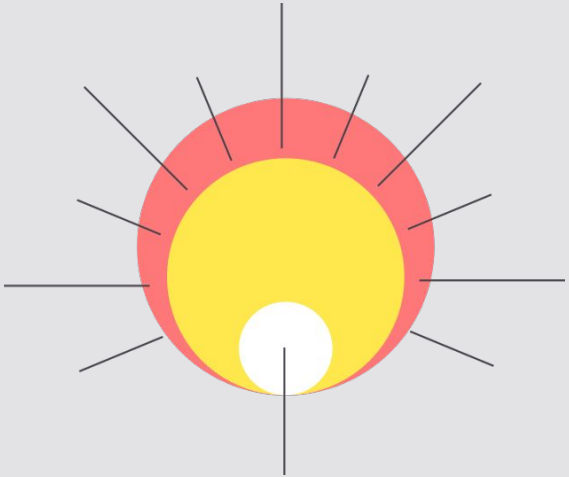
- Number of migrants predetermined
- More conservative does not change with population change

Regional quirks in migration

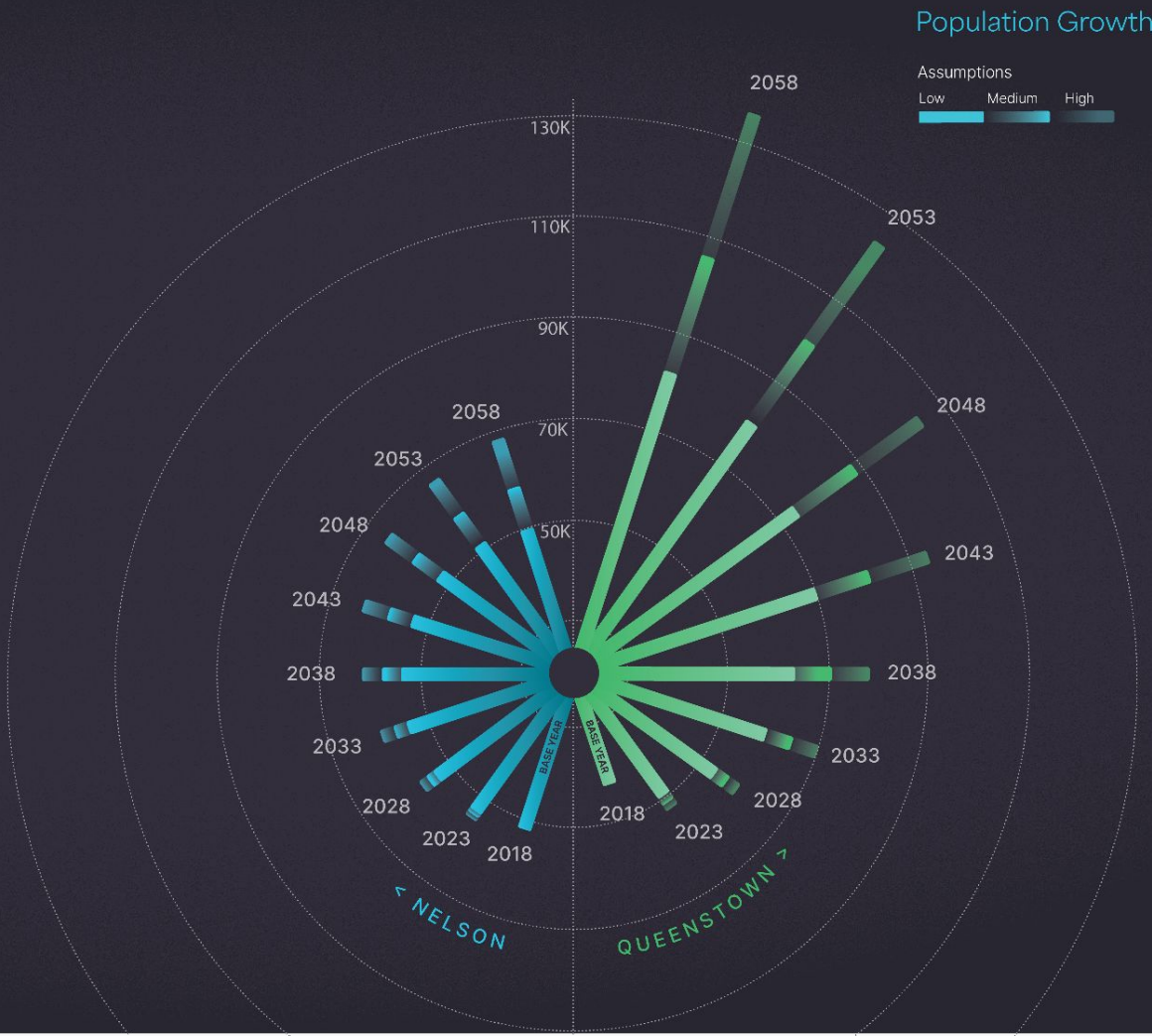




Results and Insights



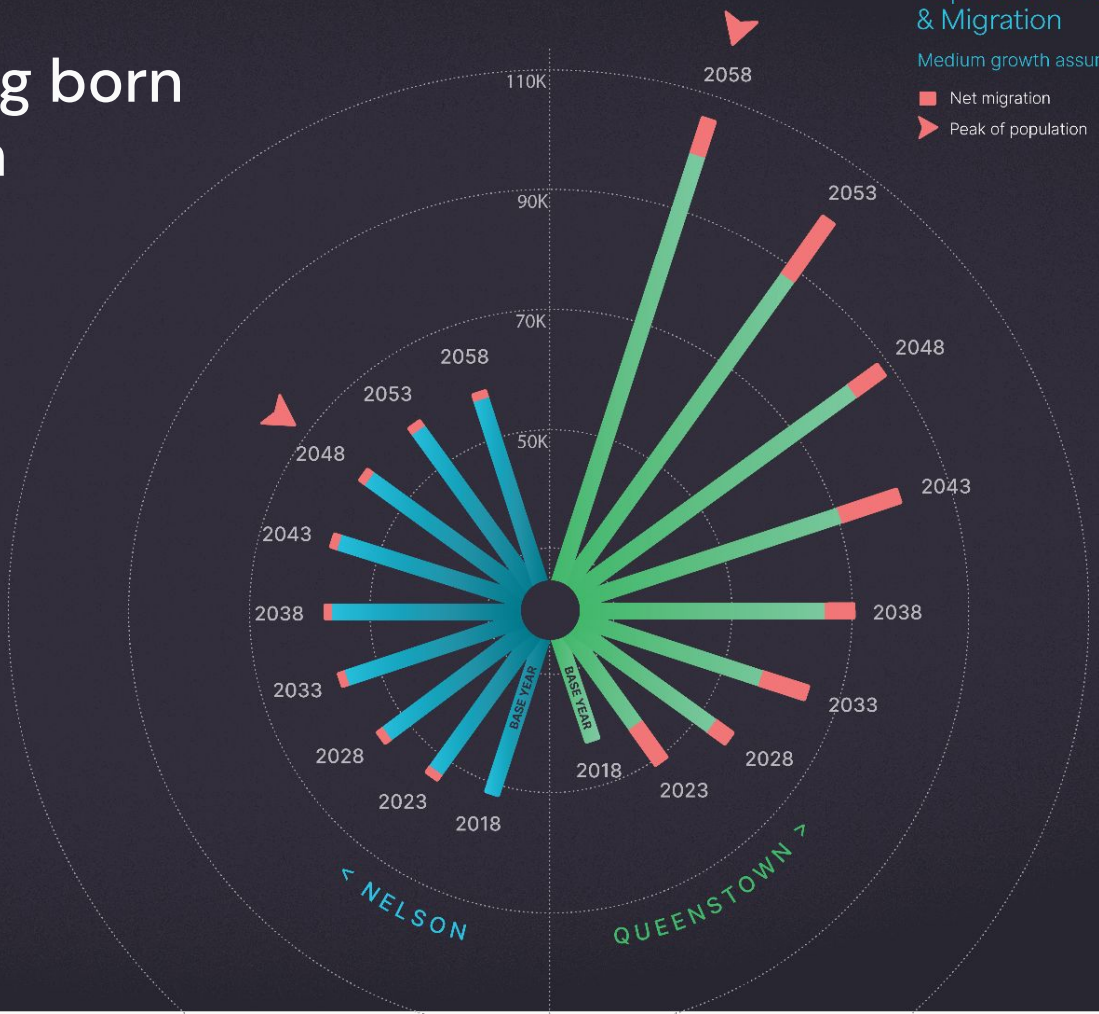
Strong population growth in QLDC



More dying than being born from 2040s in Nelson

Nelson:

- For all projection scenarios, growth is solely from migration, which offsets natural decrease from 2030-2040s.



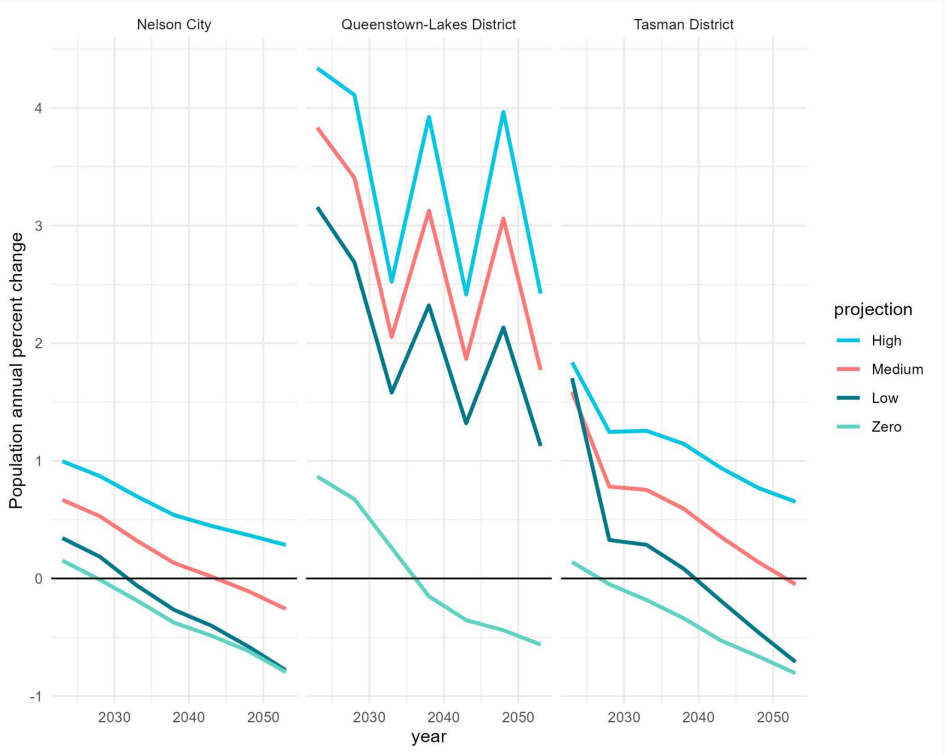
Population growth slowing

Nelson and Tasman have

- lower projected growth rates
- Negative projected growth from 2040s

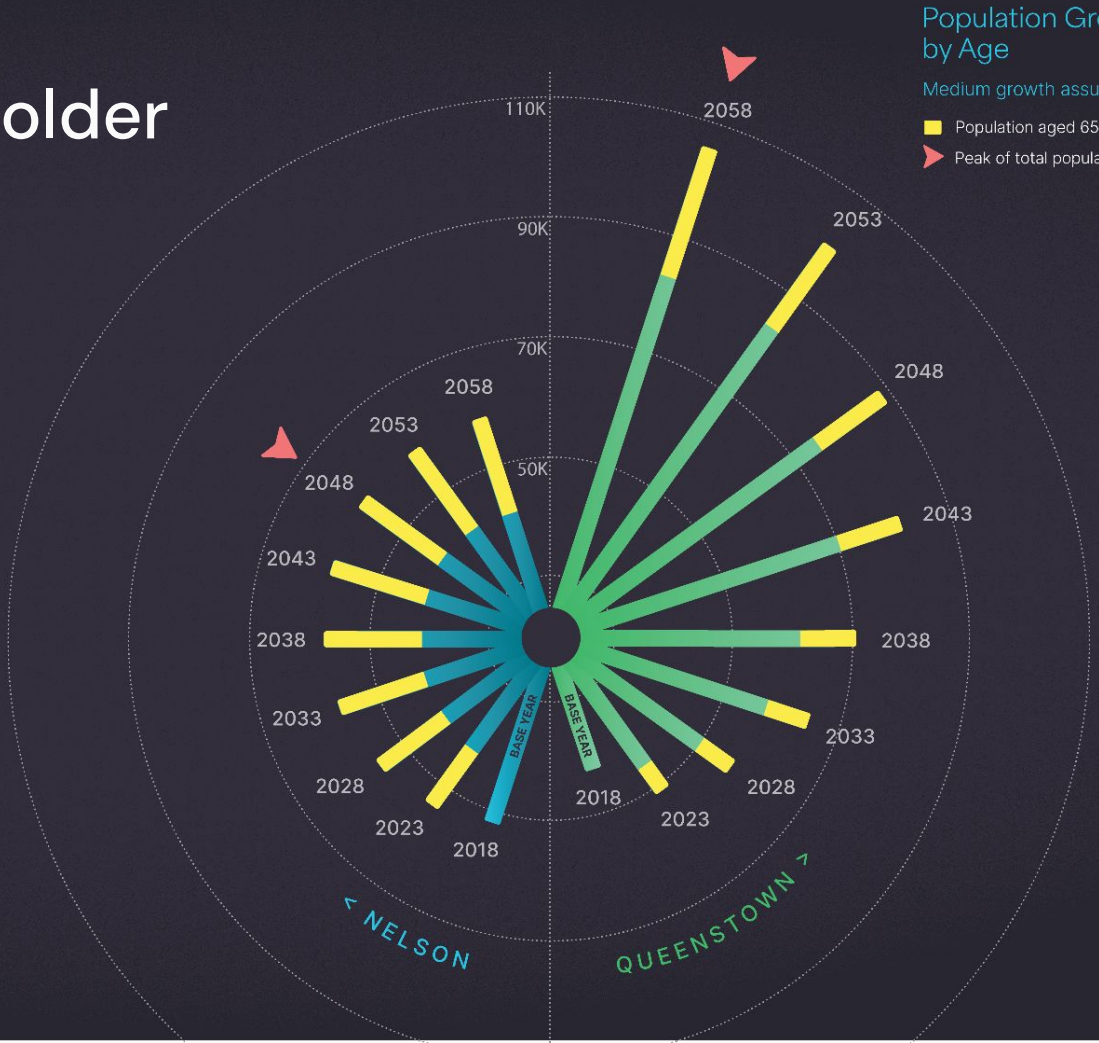
Queenstown population growth reducing overall within cyclic migration patterns,

- In the absence of migration, growth would be very similar to Nelson and Tasman
- Under a hypothetical zero migration scenario population decline would begin this decade for Nelson and Tasman and in 2030s for Queenstown



Population getting older

- Over a quarter of Nelson's and Tasman's population will be >65 by end of 2020s
- For Queenstown, over 65 year olds projected up to 19% of population by 2053
- Structural aging less advanced in Queenstown due to migration offsets



Varying child populations

Nelson

- Declines in youth populations in all but the High Variant

Queenstown

- Growth under all variants, although variants substantially influence the magnitude

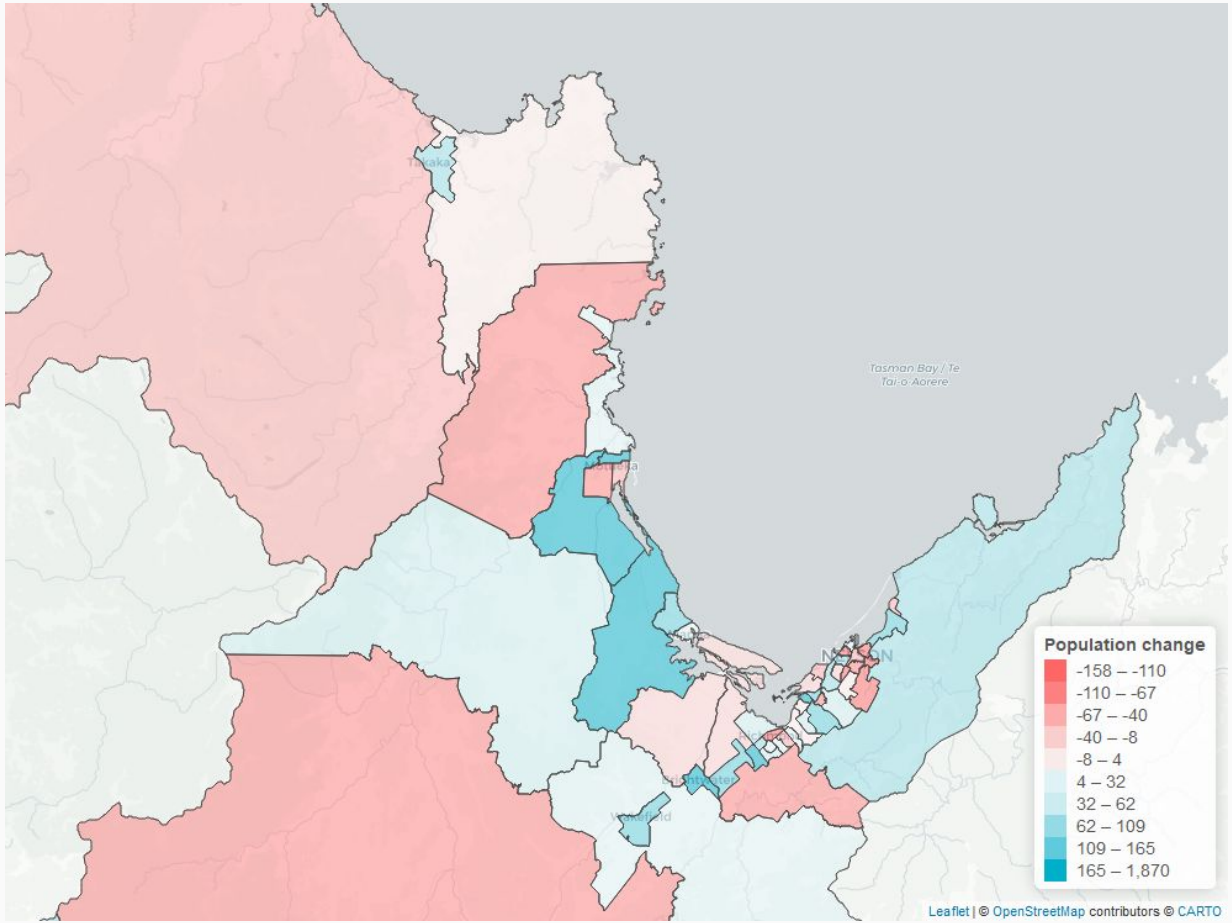
Relative size of child population declines in all three TAs

Queenstown
Despite less advanced structural aging, declines in relative size of youth populations comparable to Nelson & Tasman

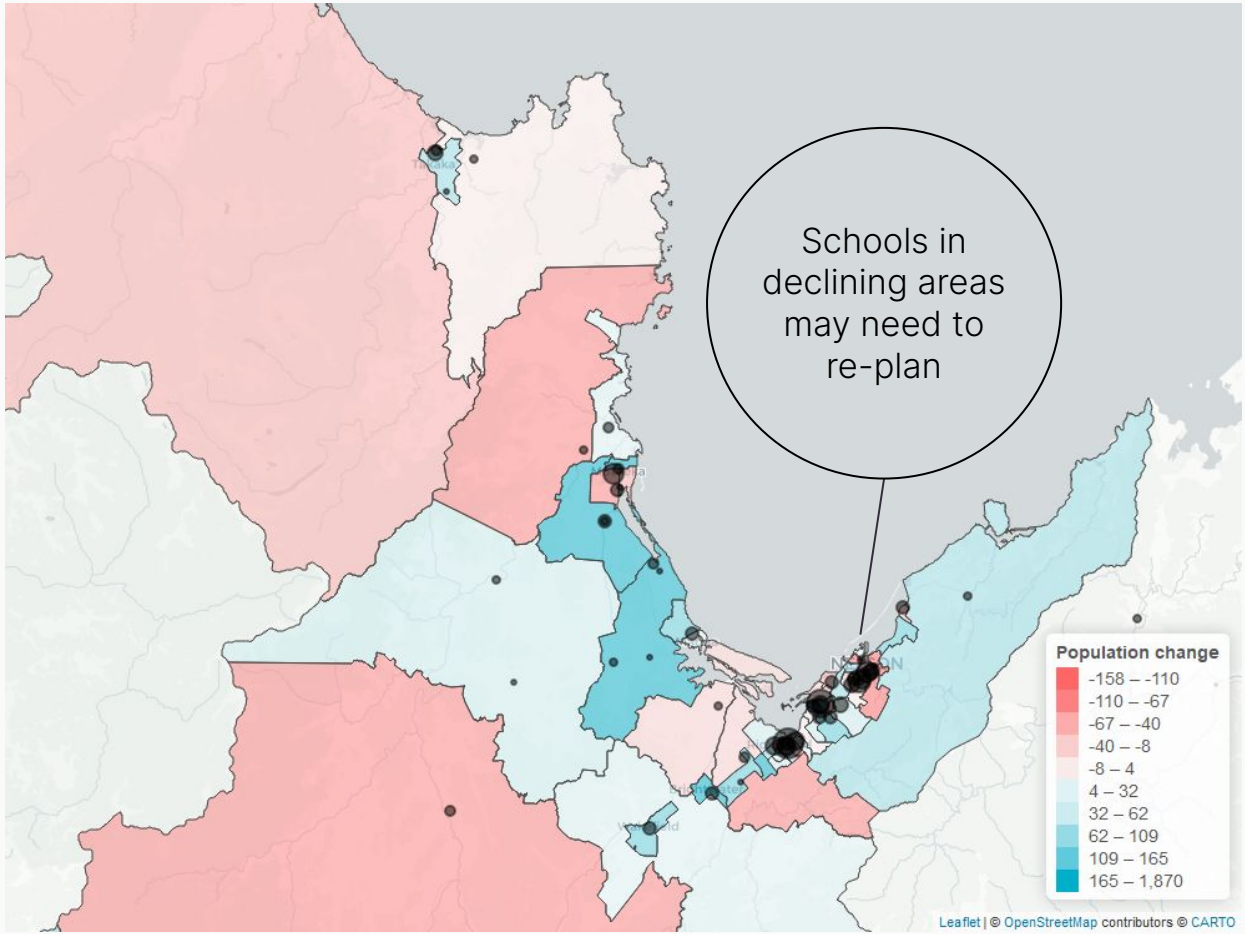
Tasman
Higher youth net migration reverses decline in relative population size 2030-2040

Within Nelson

Population change of 0-14 year olds between 2018 and 2053

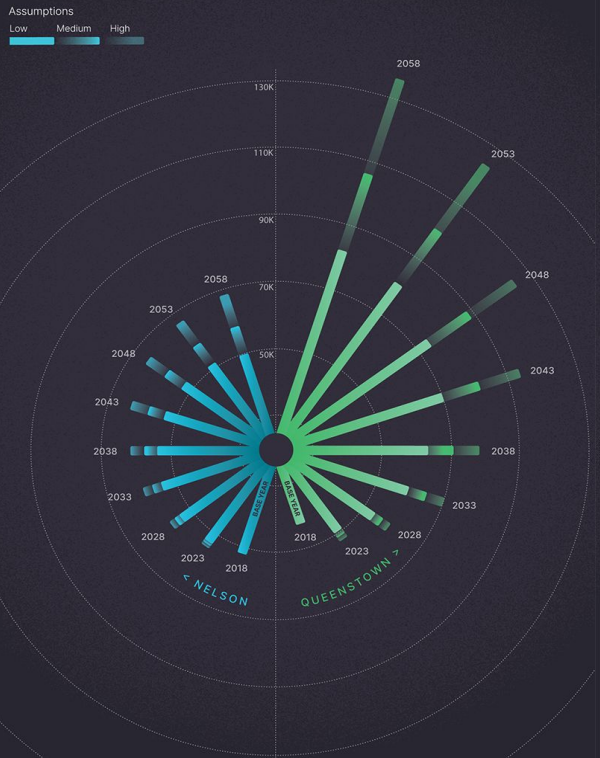


Within Nelson



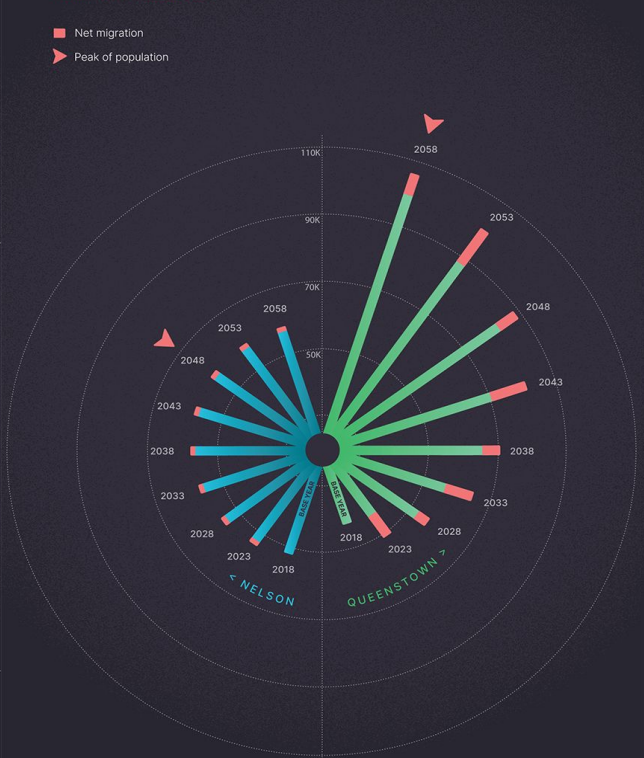
Conclusions

Population Growth



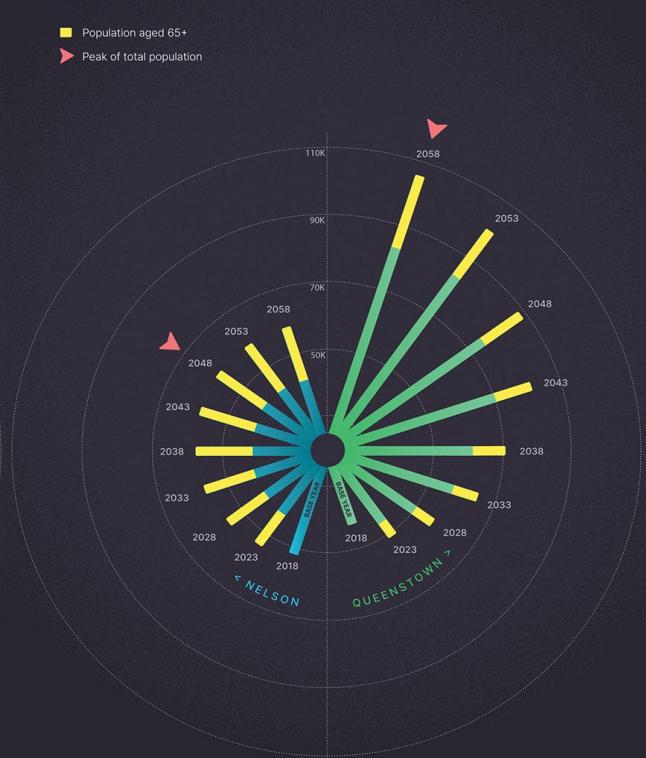
Population Growth & Migration

Medium growth assumption



Population Growth by Age

Medium growth assumption



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