

Table 1

Projected Population of New Zealand 2001 (Base) – 2101

Note Highlighted cells: Growth scenarios 1, 4 and 6 were used as the Low, Medium and High population projections in the MfE Project.

Year at 30 June	Projection Assumptions ⁽²⁾	Alternative Projection Series ⁽¹⁾							
		1	2	3	4	5	6	7	8
	Fertility	Low	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Mortality	Medium	High	Medium	Medium	Medium	Medium	Medium	Low	Medium
Net Migration	5,000	5,000	0	5,000	10,000	20,000	5,000	5,000	

	Population (000)								
2001 (Base)	3,880	3,880	3,880	3,880	3,880	3,880	3,880	3,880	3,880
2003	4,000	4,001	3,993	4,001	4,001	4,001	4,009	4,001	4,002
2004	4,040	4,042	4,024	4,043	4,043	4,043	4,062	4,044	4,047
2005	4,071	4,077	4,049	4,078	4,079	4,079	4,108	4,079	4,084
2006	4,099	4,108	4,073	4,109	4,113	4,113	4,154	4,111	4,119
2011	4,210	4,243	4,182	4,248	4,279	4,279	4,376	4,253	4,287
2016	4,305	4,368	4,280	4,379	4,439	4,439	4,597	4,389	4,453
2021	4,396	4,489	4,374	4,506	4,597	4,597	4,821	4,523	4,616
2026	4,475	4,596	4,455	4,622	4,747	4,747	5,039	4,647	4,770
2031	4,527	4,678	4,511	4,714	4,873	4,873	5,236	4,749	4,904
2036	4,544	4,728	4,534	4,775	4,971	4,971	5,407	4,822	5,014
2041	4,523	4,746	4,526	4,807	5,039	5,039	5,552	4,866	5,103
2046	4,473	4,741	4,495	4,814	5,086	5,086	5,676	4,886	5,176
2051	4,404	4,721	4,447	4,807	5,117	5,117	5,786	4,891	5,238

	Population Change 2001-2051								
Number (000)	524	841	567	926	1,236	1,236	1,906	1,010	1,358
Percent	13	22	15	24	32	32	49	26	35

	Population (000)								
2061	4,230	4,660	4,322	4,758	5,147	5,147	5,972	4,856	5,340
2071	4,024	4,586	4,179	4,689	5,153	5,153	6,128	4,791	5,441
2081	3,797	4,499	4,025	4,606	5,143	5,143	6,261	4,713	5,548
2091	3,566	4,407	3,865	4,514	5,121	5,121	6,377	4,622	5,652
2101	3,360	4,325	3,716	4,431	5,105	5,105	6,495	4,537	5,759

	Population Change 2051-2101								
Number (000)	-1,044	-396	-732	-376	-12	-12	709	-354	521
Percent	-24	-8	-16	-8	0	0	12	-7	10

Note Highlighted cells: Growth scenarios 1, 4 and 6 were used as the Low, Medium and High population projections in the MfE Project.

(1) These projections have as a base the estimated resident population of New Zealand at 30 June 2001. Eight alternative projection series have been produced incorporating different assumptions on the future fertility, mortality and migration of the population as outlined in (2) below.

(2) Projection assumptions comprise:

- (a) Fertility: Three alternative variants - designated low, medium and high - which assume that fertility rates will vary until the year 2011 when the total fertility rate will reach 1.60, 1.85 and 2.10 births per woman, respectively. After 2011, fertility rates are assumed to stay constant. The estimated base rate in 2001 was 1.97 births per woman.
- (b) Mortality: Three alternative variants - designated low, medium and high - which assume that mortality rates will continue to drop so that the average life expectancy at birth for males will increase to 84.5, 82.5 and 80.5 years, respectively, by 2051. The corresponding life expectancies for females in 2051 will be 88.0, 86.5 and 85.0 years. After 2051, mortality rates are assumed to stay constant. The estimated base life expectancies in 2001 were 76.1 years for males and 81.0 years for females.
- (c) Migration: All series assume short-term net levels for between three and five years before reaching the long-term annual net levels of 0, 5,000, 10,000 and 20,000. All series assume net migration in 2002 of 33,000. Series with long-term annual net migration of 0 assume net migration in 2003 of 27,000 and in 2004 of 5,000. Series with long-term annual net migration of 5,000 assume net migration in 2003 of 35,000, in 2004 of 16,000, in 2005 of 9,000 and in 2006 of 7,000. Series with long-term annual net migration of 10,000 assume net migration in 2003 of 35,000 and in 2004 of 16,000. Series with long-term annual net migration of 20,000 assume net migration in 2003 of 43,000 and in 2004 of 27,000.

Note: Owing to rounding, individual figures may not sum to give the stated totals.

Table 2

Projected population data used as a basis for estimating demand growth in the Waitaki catchment and surrounding districts

2001 (Base) – 2101

These normalised figures have been used to estimate growth of the Community and Domestic use types

Note Charts: Growth scenarios 1, 4 and 6 were used as the Low, Medium and High population projections in the MfE Project.

**Growth projections shown in Chart 1 are shown as normalised projections in Chart 2
Base population 2001**

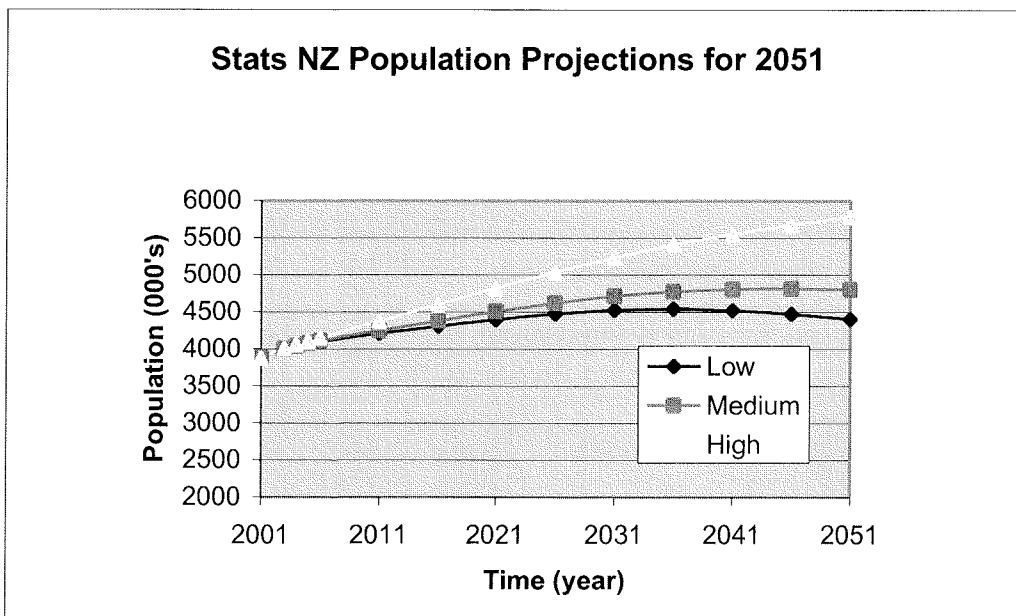


Chart 1 - Stats NZ Population Projections for 2051

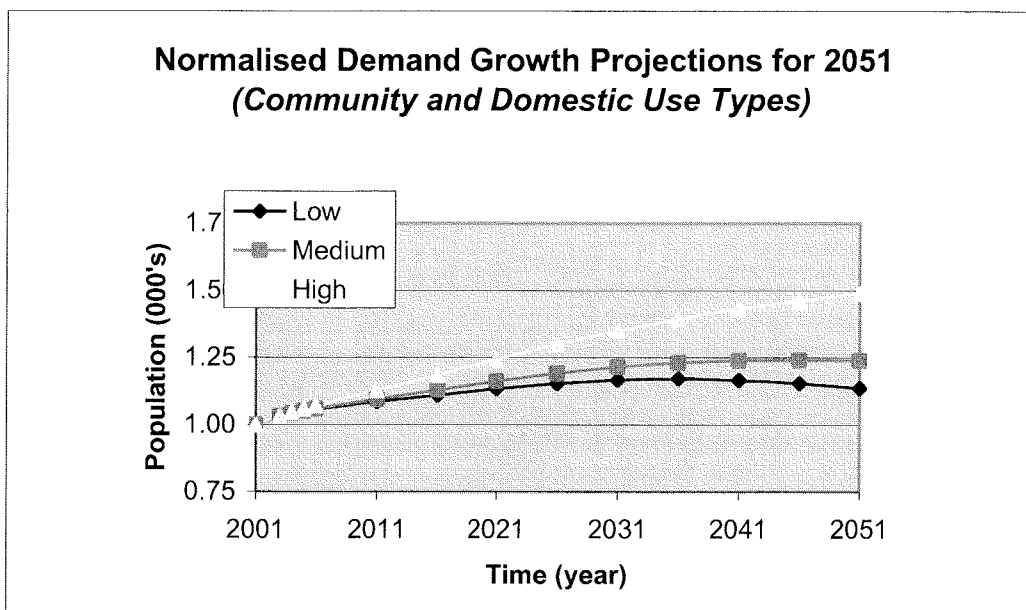


Chart 2 - Normalised Growth Projections for 2051, Community and Domestic Use Types

Table 3

**Projected population and Economic Growth data used as a basis for estimating demand growth in the Waitaki catchment and surrounding districts
2001 (Base) – 2101**

These normalised figures have been used to estimate growth of the Industrial and Tourism use types

Note Charts: Growth scenario 1 was used as the Low Projection; Economic Development "High production" growth scenario was used as the medium growth projection; and Growth scenario 6 combined with the Economic Development "High production" growth scenario generated a composite high growth projection for the MfE project. Economic growth data is assessed from the Agriculture production IO analysis supplied by Harris Consulting. We have assumed that demand for water is proportional to economic growth.

**Normalised growth projections in Chart 3
Base population 2001**

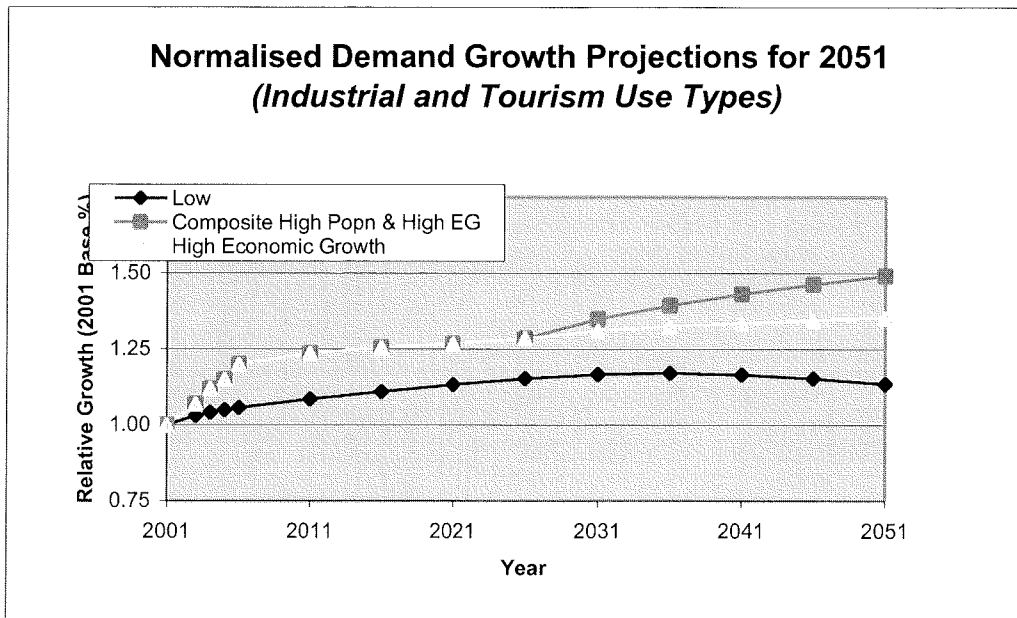


Chart 3 - Normalised Growth Projections for 2051, Industrial and Tourism Use Types

Population Projection for Timaru District

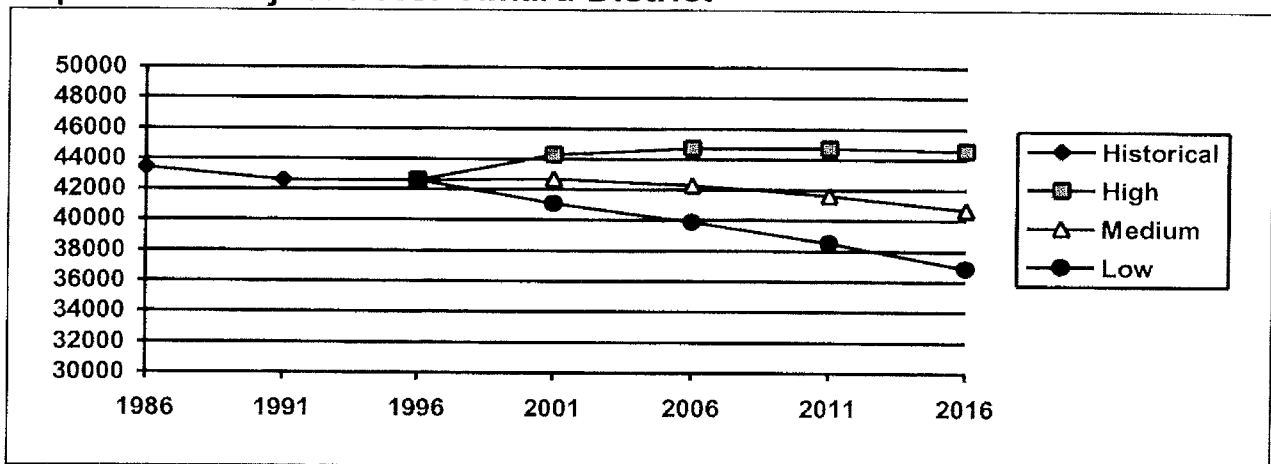


Chart 4 - Population Projections for Timaru District (source TDC Activity management plan - water)