



MINISTRY OF EDUCATION

Te Tāhuhu o te Mātauranga

Central Forecasting and Modelling Unit

National School Roll Projections

2008 Update

For External Distribution

Executive Summary

The 2008 National School Roll Projections were completed in January 2009 and, overall, have been increased slightly compared to the previous projections. This is mainly due to actual birth numbers in 2008 being higher than predicted by Statistics New Zealand's medium projection.

The ministry has produced three variants of projections – low, medium and high – to provide risk assessments around projected rolls. The medium projection is traditionally used for financial forecasting and other planning purposes. Under the medium projection, primary school rolls¹ are expected to increase steadily from 2009 and peak in 2019 with 520,000 students expected to attend New Zealand schools that year.

Following a gradual decline over the next decade, secondary school rolls are expected to start growing in 2017 and peak in 2024 with an estimated 302,000 full-time equivalent students.

Total school rolls are expected to remain at the present level of just under 750,000 students² until 2012. This is followed by projected roll increases over the next decade, with almost 800,000 students expected in the early 2020's. This is around 7,000 students higher than previously projected.

As the projected increase in enrolments is largely due to the high number of actual and projected births, analysis has been undertaken to identify what would happen if fertility rates remained at the current level in the long-term. Using the ministry's medium projection and applying Statistics New Zealand's high fertility scenario from 2009 onwards, total school rolls would be expected to increase to just over 840,000 by 2027.

Significant changes in school rolls are not expected over the next three years. Nevertheless, the high level of actual births in 2007 and 2008 will start to impact on primary schools from 2012 onwards. The Ministry of Education will continue to monitor closely the number of school enrolments and the drivers behind these (births, migration and retention) and consider the impact on future planning and financial forecasting.

¹ Projected rolls do not include foreign fee-paying students and students attending special schools.

² Expressed in terms of full-time equivalent students (FTES).

Introduction

This report describes the latest projections of the number of full-time equivalent students³ enrolled in New Zealand schools. The projections are used to assess demand for resources in the schooling sector and, as part of the Government's five-year budget process, to support expenditure forecasts of teachers' salaries, schools' operational grants and student allowances. The forecast rolls presented here are snapshots based as at 1 July for primary year-levels and 1 March for secondary year-levels.

These projections include actual school rolls up to July 2008 for primary year-levels and March 2008 for secondary year-levels. Assumptions regarding progression/retention rates, births and migration have been revised since the previous projections.

This report is divided into three sections:

1. Results of the latest school roll projections;
2. Projections under low, medium and high fertility assumptions; and
3. Projections for special school students and home schooling students.

³ Note that special and home-schooled students are modelled separately and are not included in the roll projections discussed in Sections 1 and 2 of this report.

1. School Roll Projections

The forecast results presented here are based on a series of three roll projections: low, medium and high. While the medium projection is what the ministry has traditionally used for financial forecasting and planning purposes, consideration should be given to the possibility of high and low projections eventuating. The medium projection is based on the ministry's best estimates for what will happen to progression/retention rates, fertility and migration levels in future years. For example, it is assumed that retention rates will be high in the next few years due to the current financial conditions. There is also the possibility that migration could be lower than predicted by Statistics New Zealand (SNZ). These kinds of assumptions are taken into account when producing the medium projection. The low and high projections are produced by setting the progression/retention rates, fertility and migration assumptions to lower or higher levels, respectively (see Section 2 for further discussion about fertility and migration assumptions).

The projected rolls, as presented below, consist of regular students in Year 1 to Year 15 within the New Zealand schooling system. This includes adult students, but excludes foreign fee paying students (FFPs) and students receiving scholarships from the New Zealand Agency for International Development (NZ Aid). Special school and home schooled students are projected separately and will be discussed in Section 3.

Primary School Roll Projections

In 2008, primary enrolments were around 474,100 - approximately 3,400 or 0.7% fewer than in 2007. The rolls are expected to increase from 2009 onwards and peak at 520,100 in 2019 (Table 1). Note that the high Year 7 rolls observed in Table 1 are due to measurement issues and not to do with an unusually large cohort.

The single most important driver in the primary forecast is the number of children born in a given year and their entrance into the school system five years later. Since 2003, there has been an increase in the number of births and this has intensified in recent years. This increase is expected to boost primary rolls from 2009 and eventually impact on secondary rolls in later years. In addition, if births remain at current levels for the next few years this will further increase projected primary enrolments from 2014 onwards.

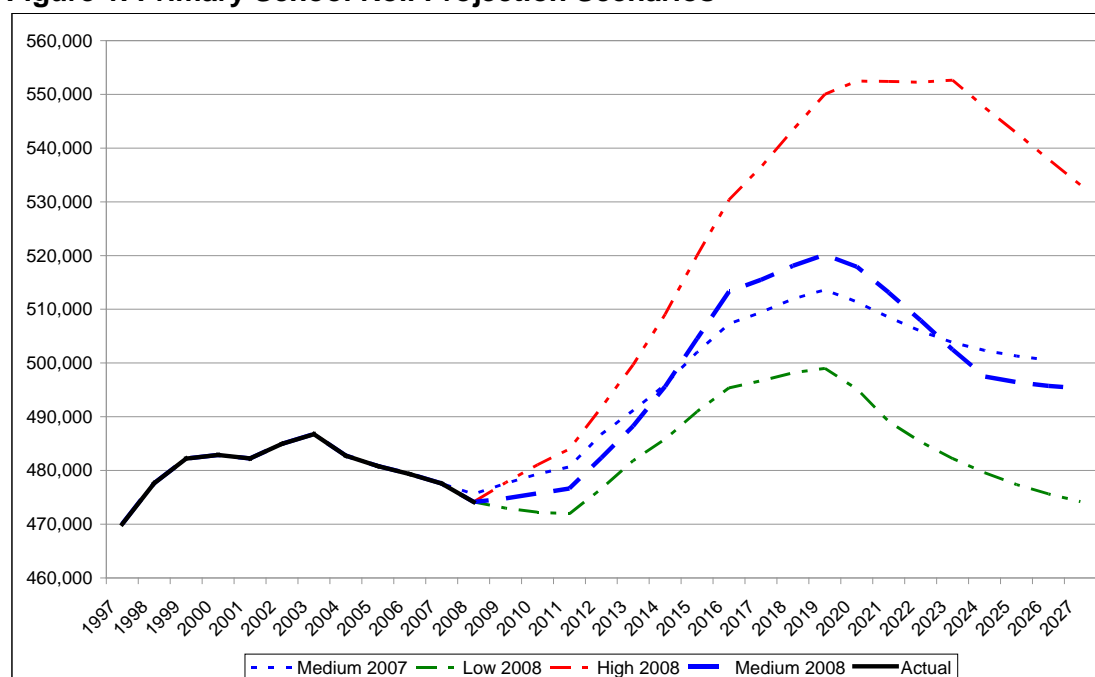
The impact of migrants on primary enrolments is expected to decline in the short-term. The level of primary school-age migrants has declined steadily since its peak in 2003 and this trend is expected to be maintained for the next few years.

Figure 1 shows projected primary rolls under the three sets of scenarios (low, medium and high) and compares these with the previous medium projection (2007).

Table 1. Breakdown of the Primary School Roll Projections (Medium Variant)

Projection Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Total
2008*	56,948	56,395	57,780	59,168	57,479	58,501	67,778	60,094	474,143
2009	59,640	56,070	56,400	58,090	59,480	57,030	68,720	59,400	474,830
2010	59,460	58,730	56,090	56,730	58,430	59,040	67,020	60,240	475,740
2011	59,650	58,570	58,760	56,430	57,070	58,000	69,380	58,760	476,630
2012	63,450	58,760	58,600	59,110	56,770	56,660	68,170	60,830	482,340
2013	65,860	62,490	58,790	58,940	59,460	56,370	66,590	59,770	488,260
2014	66,150	64,850	62,500	59,130	59,290	59,020	66,250	58,390	495,600
2015	65,850	65,140	64,860	62,860	59,480	58,860	69,360	58,090	504,510
2016	65,850	64,840	65,150	65,230	63,220	59,050	69,170	60,810	513,320
2017	61,910	64,840	64,850	65,520	65,590	62,740	69,390	60,640	515,490
2018	61,500	60,970	64,850	65,220	65,880	65,090	73,730	60,840	518,080
2019	61,300	60,580	60,990	65,220	65,580	65,380	76,480	64,620	520,150
2020	61,100	60,380	60,600	61,350	65,580	65,080	76,810	67,030	517,930
2021	61,000	60,180	60,400	60,950	61,700	65,080	76,470	67,320	513,100
2022	60,900	60,080	60,200	60,750	61,300	61,240	76,470	67,010	507,960
2023	60,900	59,980	60,100	60,550	61,100	60,850	71,970	67,010	502,470
2024	60,900	59,980	60,010	60,460	60,910	60,650	71,510	63,080	497,490
2025	60,900	59,980	60,010	60,360	60,810	60,460	71,280	62,680	496,460
2026	60,800	59,980	60,010	60,360	60,710	60,360	71,050	62,480	495,730
2027	60,900	59,880	60,010	60,360	60,710	60,260	70,930	62,280	495,320

* Actual July roll in 2008.

Figure 1. Primary School Roll Projection Scenarios

Secondary School Roll Projections

Table 2. Breakdown of the Secondary School Roll Projections (Medium Variant)

Projection Year	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
2008*	60,313	60,519	60,744	52,766	40,259	897	241	275,739
2009	60,040	60,470	60,240	52,030	40,620	730	250	274,390
2010	59,370	60,220	60,210	51,610	40,070	730	210	272,420
2011	60,210	59,550	59,970	51,620	39,750	720	210	272,030
2012	58,740	60,390	59,310	51,400	39,780	720	200	270,550
2013	60,800	58,920	60,150	50,840	39,590	720	200	271,220
2014	59,740	60,980	58,690	51,560	39,180	710	200	271,060
2015	58,370	59,920	60,730	50,320	39,720	710	200	269,970
2016	58,080	58,560	59,680	52,050	38,770	720	200	268,050
2017	60,780	58,260	58,330	51,160	40,100	700	200	269,540
2018	60,610	60,960	58,040	50,030	39,420	720	200	269,980
2019	60,810	60,790	60,710	49,760	38,570	710	200	271,550
2020	64,580	60,980	60,540	52,040	38,350	700	200	277,400
2021	66,970	64,740	60,730	51,900	40,100	690	200	285,330
2022	67,260	67,130	64,460	52,060	39,980	720	200	291,810
2023	66,960	67,420	66,820	55,230	40,100	720	210	297,450
2024	66,960	67,120	67,110	57,230	42,530	720	200	301,880
2025	63,050	67,120	66,810	57,480	44,060	770	200	299,490
2026	62,640	63,220	66,810	57,220	44,250	790	220	295,150
2027	62,440	62,820	62,940	57,220	44,060	800	220	290,510

* Actual March roll in 2008.

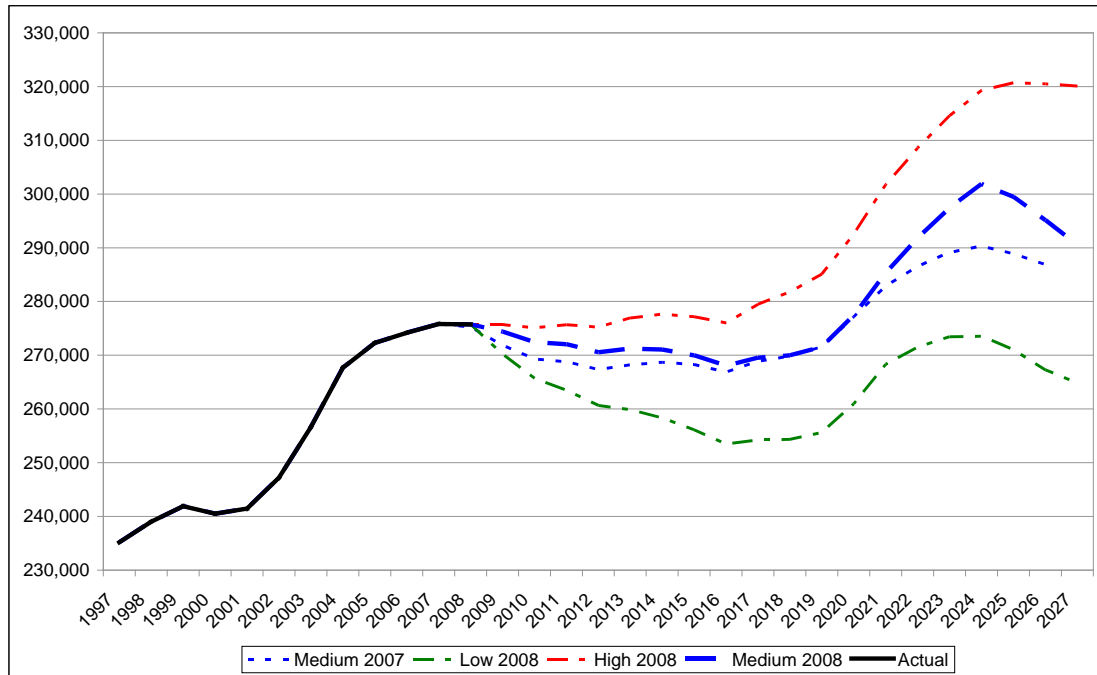
In 2008, secondary enrolments were around 275,700 - approximately 100 or 0.03% less than in 2007. Secondary rolls are expected to continue to decline until 2017 when the increase in births in 2003 begins to flow through the secondary system. Larger increases appear around 2020 due to recent high births and the impact of high birth projections. Secondary rolls are projected to peak in 2024, with around 301,900 full-time equivalent students expected (Table 2).

The secondary school roll projections are affected by actual and projected births as well as retention levels at upper secondary schools. There are policies that have recently been implemented or are being consulted on that are aimed at improving the retention levels in secondary schools. Retention rates have been increasing and are assumed to continue to do so. A lower population base is the reason for the slight fall in Year 12-13 rolls observed in Table 2.

The impact of migrants on secondary enrolments is expected to decline in the short-term. The level of secondary school-age migrants has declined steadily since its peak in 2003 and this trend is expected to be maintained for the next few years.

Figure 2 shows projected secondary rolls under the three sets of scenarios (low, medium and high) and compares these with the previous medium projection (2007).

Figure 2. Secondary School Roll Projection Scenarios



2. Fertility Scenarios

Given the rapid rise in births in recent years, it is important to assess the sensitivity of projections relating to fertility assumptions.

SNZ produces nine series of birth projections, based on different sets of assumptions regarding fertility, migration and mortality. Series 4, 5 and 8 of these projections have been adopted as a basis for the low, medium and high scenarios for the ministry's 2008 National School Roll Projections. Series 5 is considered by SNZ as the most likely long-term scenario and is based on medium fertility, medium mortality and medium migration assumptions. Series 4 and 8 use the same assumptions except that Series 4 assumes low migration and Series 8 assumes high fertility.

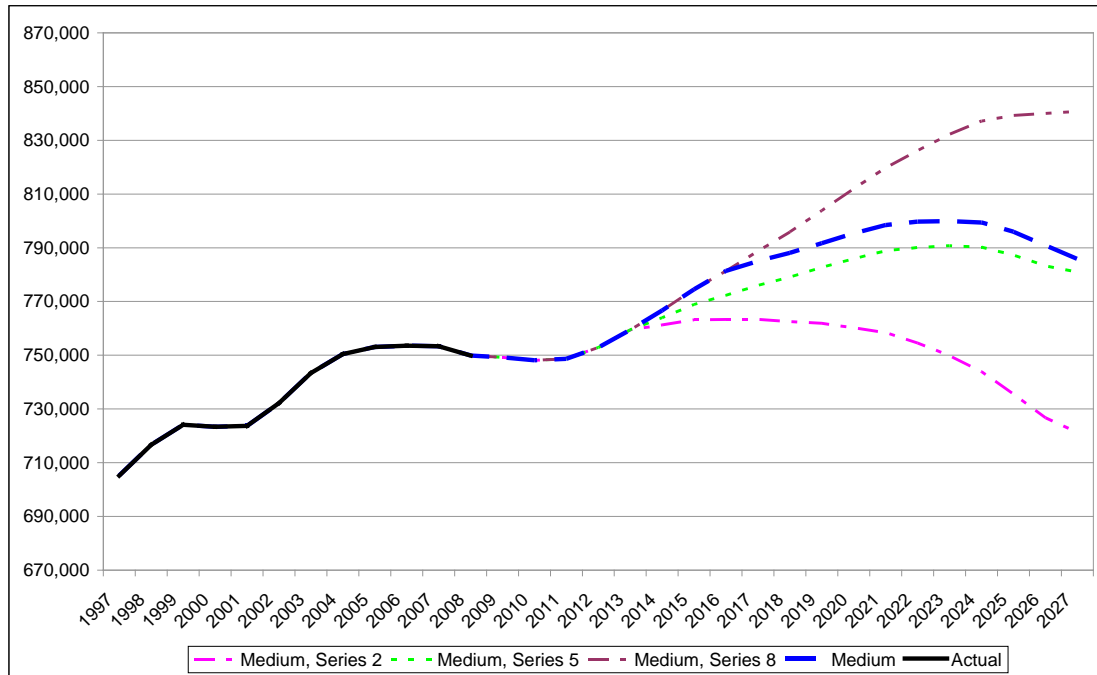
In 2008 the actual number of births was very close to the number predicted by Series 8, and there is no indication yet that birth numbers will fall in the short-term. Therefore the ministry's medium projection is based on the assumption that births will remain at the Series 8 level for three years before returning to the Series 5 level from 2012 onwards⁴. The ministry's low projection assumes Series 4 from 2009 onwards and the high projection assumes Series 8 for 2009-2018 and then Series 5 from 2019 onwards.

As stated previously, the ministry's low, medium and high projections are produced by varying progression/retention rates, fertility and migration assumptions. In order to isolate the impact of fertility from other factors it is useful to consider the ministry's medium projection and apply different fertility scenarios whilst holding all other factors constant. Figure 3 shows the resulting projections when Series 2, 5 and 8 are applied from 2009 onwards and compares them with the ministry's medium projection. (Note that Series 2 of the birth projections assumes low fertility, medium mortality and medium migration).

Figure 3 shows that the fertility assumption has a crucial impact on projected rolls in later years. Under the high fertility (Series 8) scenario we would expect total rolls to increase to around 840,000 in 2027. Under the medium fertility (Series 5) scenario we would expect total rolls to peak at just over 790,000 in 2023. Note that the only difference between this projection and the ministry's medium projection is that the latter is based on the assumption that births stay at the Series 8 level for three years before returning to Series 5 in 2012. This difference results in a maximum divergence of about 10,000 between the two projections. It is also interesting to note that even under the low fertility (Series 2) scenario, we would still expect total rolls to peak at a higher level (763,000 in 2017) than the previous peak of 754,000 in 2006. This is due to the effect of the actual high births of the last few years flowing through the school system.

⁴ SNZ's current 2006-base projections were released in October 2007. In light of the recent surge in births, SNZ are in the process of revising their projections. These updated projections are due to be released later in the year. In the meantime, SNZ's advice is to use Series 8 birth projections in the short-term and Series 5 in the long-term.

Figure 3. Total School Rolls: Low, Medium and High Fertility Projections



3. Special Schools and Home Schooled Students

Special school enrolments and home schooled students are modelled separately from the National School Roll Projections and are not included in the discussions above. Projected special school enrolments are expected to increase from 3,500 in July 2008 to 3,700 in July 2027 (Table 3). The number of home schooled students is also expected to grow, from 6,500 in July 2008 to 6,800 in July 2027.

Table 3. Projections for Special Schools and Home Schooling Students

Projection Year	Special School Students			Home Schooling Students		
	Primary	Secondary	Total	Primary	Secondary	Total
2004*	1,695	1,518	3,213	4,315	2,191	6,506
2005*	1,739	1,635	3,374	4,371	2,057	6,428
2006*	1,668	1,684	3,352	4,247	2,051	6,298
2007*	1,669	1,798	3,467	4,291	2,182	6,473
2008*	1,677	1,843	3,520	4,303	2,197	6,500
2009	1,680	1,840	3,520	4,300	2,200	6,500
2010	1,670	1,840	3,510	4,290	2,190	6,490
2011	1,670	1,840	3,510	4,300	2,190	6,490
2012	1,680	1,850	3,530	4,320	2,210	6,530
2013	1,700	1,870	3,570	4,360	2,230	6,590
2014	1,710	1,880	3,600	4,410	2,250	6,660
2015	1,730	1,900	3,640	4,450	2,270	6,730
2016	1,750	1,920	3,670	4,490	2,290	6,790
2017	1,760	1,930	3,690	4,510	2,300	6,820
2018	1,760	1,940	3,700	4,530	2,310	6,850
2019	1,770	1,950	3,720	4,550	2,320	6,880
2020	1,780	1,960	3,740	4,570	2,330	6,910
2021	1,790	1,960	3,750	4,590	2,340	6,930
2022	1,790	1,970	3,760	4,590	2,350	6,940
2023	1,790	1,970	3,760	4,590	2,340	6,930
2024	1,790	1,970	3,760	4,580	2,340	6,920
2025	1,780	1,960	3,740	4,560	2,330	6,900
2026	1,770	1,950	3,720	4,540	2,320	6,860
2027	1,760	1,930	3,690	4,510	2,300	6,820

* Actual July rolls.

Conclusion

Total school roll projections have been increased slightly, mostly as a result of the high number of births in 2008. A number of different projection scenarios have been presented here to demonstrate the impact of different assumptions on the roll projections.

These projections should be used with caution given the increasing degree of uncertainty that exists over time. Nevertheless, even if future births are lower than projected, the high level of actual births experienced in 2007 and 2008 is 'real' and will impact on the early childhood education sector and the schooling system shortly. The Ministry of Education will continue to monitor closely the number of school enrolments and the drivers behind these (births, migration and retention) and consider the impact on future planning and financial forecasting.