

Briefing Note: Public Release of Teacher Demand and Supply Planning Projection for 2023

To:	Hon Jan Tinetti, Associate Minister of Education		
Cc:	Hon Chris Hipkins, Minister of Education		
Date:	28 November 2022	Priority:	Medium
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Purpose

The purpose of this paper is to advise you on the outcomes of the Teacher Demand and Supply Planning Projections (TDS) ahead of its planned public release.

Summary

1. The Ministry models teacher demand and supply annually to forecast the availability of primary and secondary teaching staff required to meet the needs of state and state integrated schools. The modelling is based on a range of assumptions that continue to be challenging to forecast given the recent impact of COVID-19. For that reason, our modelling is based around two scenarios with different sets of assumptions about future macro-economic conditions.
2. In the primary sector, we estimate there will be a surplus of between c.639 and c.1,028 teachers under the two scenarios modelled for 2023. This equates to a likely surplus of between 1.8 percent and 2.9 percent above likely demand. The surplus is projected to increase in 2024 and 2025, largely due to the continued decline in the primary-age student population.
3. In the secondary sector, we estimate there will be between a deficit of c.42 and a surplus of c.365 teachers under the two scenarios modelled for 2023. This equates to deficit/surplus of -0.1 percent and 1.3 percent below/above demand. The outlook for subsequent years looks more challenging with deficits predicted to grow to between 138 and 628 in 2025. Note this outlook could be significantly changed based on further investment in initiatives to attract, train and retrain teachers in the sector. Future economic conditions will also have a material impact on these projections.

4. These projections include the results of the investment announced in September 2022 which was primarily designed to increase supply in 2023. 9(2)(f)(iv)
5. Following the release of the TDS, you can expect some public comment from stakeholders highlighting ongoing recruitment challenges, even at primary level, and noting the gap between their experience and the national picture. In the Ministry's communications around the release, we will reiterate that the TDS should be viewed as a measure of supply at a *national* level, rather than a projection for their *specific* school.

Recommended Actions

The Ministry of Education recommends you:

- a. **note** that, in 2023, the Ministry projects a modest national surplus of primary teachers (between 639 and 1028 teachers, 1.8-2.9%% of current teaching staff) and either a very small secondary teacher surplus (365 teachers, 1.3%) or a small deficit (42, 0.1%)

Noted

- b. **note** that the outlook for the secondary sector will remain challenging during the forecast period, with the secondary age student population peaking in 2025. This will lead to sustained demand for additional secondary teachers above the increased numbers expected to join the workforce in 2023.

Noted

- c. 9(2)(f)(iv)

Noted

- d. **Note** that the projections are calculated at a national-level and do not speak to regional and local demand challenges. Regional calculations of demand and supply are being trialled this year. We will aim to incorporate these into next year's release.

Noted

- e. **agree** to discuss the appropriate date for publishing the Teacher Demand and Supply Projection on the Education Counts website at an upcoming officials' meeting

Agree Disagree

- f. **agree** the Ministry of Education will release this briefing once the Projections are published with appropriate redactions in line with the Official Information Act.

☒ **Agree** ☐ **Disagree**



Anna Welanyk
Hautū Te Puna Ohumahi Mātauranga

2 / 12 / 2022



Hon Jan Tinetti
Associate Minister of Education

04/12/2022

The Ministry has created a national forecast of teacher demand and supply for the past five years

6. In term 4 each year, the Ministry models teacher demand and supply for subsequent years. The Teacher Demand and Supply Planning Projection (TDS) is constructed to forecast the number of teachers required by schools, and to compare this with an estimate of how many teachers are projected to be available in the system in the future.
7. The purpose of this is to better understand the balance between future demand and supply and design interventions to better manage supply.
8. The model estimates headcounts for teachers employed by state and state-integrated schools on a permanent or fixed-term basis. It therefore excludes day-relief teachers, private schools, and the ECE sector. It also does not provide separate projections for Māori medium and Kaupapa Māori schools.
9. Forecasting teacher supply and demand is challenging. At its fundamental level, it involves calculating the expected number of students, staffing entitlements, and number of teachers entering and leaving the profession. Therefore, supply and demand can be highly sensitive to broader policy settings, collective agreement requirements and wider economic and employment patterns.
10. Like any forward-looking projection, our approach is based on a series of assumptions. Most significantly, our projection does not include any planned change which is not yet in the public domain. As a result, the projection does not include any changes as a result of the collective bargaining process currently underway or potential changes which may make New Zealand more attractive to overseas teachers or make the career more attractive to domestic students.
11. The investment package announced in September 2022 was primarily focused on investment to improve supply in 2023. The likely impact of this package has been included. 9(2)(f)(iv)
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12. The projections are also highly sensitive to the economic conditions. Whilst many COVID-related restrictions have been lifted, there remains uncertainty around how economic and employment conditions will adjust over the coming years. We know that when labour market conditions are tight, as they currently are, we are likely to see a decline in the number of domestic students enrolling in ITE and a decline in retention rates as teachers look for other career opportunities. Retention rates are a significant driver of teacher supply. For example, a one percentage point decrease in retention rates would lead to a decrease of about 350 primary teachers and 280 secondary teachers.
13. Due to the level of uncertainty and how sensitive projections of teacher supply are to retention rates, scenario-based ranges are provided in this year's TDS. In the 'high' scenarios, we assume a return to a pre-COVID-19 numbers for teachers entering and remaining in the profession. We also assume the suite of teacher supply initiatives announced in September 2022 has a high take-up rate. In our 'low' scenarios, we assume lower retention rates and reduced effectiveness of the September 2022 initiatives.
14. Finally, the model makes a more technical set of assumptions about key behaviours

within the sector, such as the rate at which schools will continue to employ above entitlement teachers. Unless we have a compelling reason to change them, we keep these assumptions consistent between years to increase comparability. These assumptions and our approach have been independently peer-reviewed by a third party consultancy which has validated our approach.

The latest TDS shows a small surplus of primary teachers and a negligible surplus of secondary teachers

15. The TDS continue to show that challenges remain, particularly at secondary level. The Summary Report for the Teacher Demand and Supply Planning Projection is attached as **Annex 1**.
16. While it may seem logical to try match projected supply perfectly with projected demand, we consider a modest national surplus is preferable because:
 - We know that teachers are not highly mobile. As a result, a national surplus does not necessarily mean sufficient teachers at a local level.
 - At secondary level, teachers are not fully interchangeable between subjects
 - It could replenish the stocks of relief teachers available. (Today: c.800 fewer active relief teachers in the system vs.2019)
 - It gives schools greater recruitment options and choices.
17. It is important to note the projections do not consider any possible, or likely, future policy decisions that could impact teacher supply or demand.

Primary Sector

18. At a national level, the TDS projects there will be a sufficient supply of teachers in the primary sector to meet forecast demand. For example, in the 2023 teaching year, the TDS projects there will be teacher surplus of 639 under the low scenario and 1,028 under the high scenario. This equates to a surplus of 1.8 percent and 2.9 percent above demand. The surplus, both numerically and percentage, increases for 2024 and 2025.

Table 1: Primary School Demand-Supply Model

Year	Demand	High Scenario			Low Scenario		
		Supply	Gap		Supply	Gap	
2023	35,926	36,954	1,028	2.9%	36,565	639	1.8%
2024	35,422	37,152	1,730	4.9%	36,626	1,204	3.4%
2025	35,116	37,369	2,253	6.4%	36,899	1,783	5.1%

Secondary Sector

19. At a national level, the TDS projects there will be a negligible national surplus of secondary teachers next year, with potential deficits in subsequent years. Longer term, we expect 2025 to be a historical peak as there is bubble of students currently working their way through the schooling system.

Table 2: Secondary School Demand-Supply Model

Year	Demand	High Scenario			Low Scenario		
		Supply	Gap		Supply	Gap	
2023	28,089	28,454	365	1.3%	28,047	-42	-0.1%
2024	28,459	28,492	33	0.1%	27,948	-511	-1.8%
2025	28,582	28,444	-138	-0.5%	27,954	-628	-2.2%

20. For example, in the 2023 teaching year, the TDS projects there will be a surplus of 365 under the high scenario and a deficit of 42 under the low scenario. This equates to surplus of 1.3 percent and -0.1 percent above/below demand.
21. The outlook for subsequent years looks more challenging with deficits predicted to grow, then peak in 2025, before tapering off. **This peak is driven by a period of higher birth rates between 2008 and 2011 and several years of net positive migration of younger school-aged children.** This means the number of students expected to finish at primary and move into secondary schooling looks set to steadily grow during the current projection period. As these student age out of secondary school, demand at secondary level will gradually decline after 2025.
22. These national projections also do not account for different supply pressures across subjects. We know there are already systematic supply pressures for subjects such as STEM and Te Reo Māori. This pressure will likely deepen as the overall supply of secondary teachers shrinks.

Without September's Budget investment the forecast for teacher supply would be significantly more challenging

23. In September, Cabinet agreed to allocate \$23.626 million to increase teacher supply by up to 177 domestic teachers and 760 international teachers, primarily for the 2023 school year. At the time several key indicators were pointing to an increased and more urgent teacher supply challenge including increases in the rate that teachers were leaving the profession and schools were having difficulties finding replacements.
24. The increase in supply expected from this financial investment is included within the TDS. Without this investment, we would have been forecasting a significantly (between 200-400 teachers) greater deficit in the secondary sectors in each year, as well as a smaller surplus in primary.

Implication on future Teacher Supply initiatives

25. The Ministry continues to work with the sector to help them to respond to the ongoing challenge of ensuring there are sufficient teachers, with the right skills, in the right locations, to meet demand.
26. The Ministry also runs several existing and new initiatives to address teacher supply. These include TeachNZ scholarships to boost ITE enrolment, Overseas Relocation Grants and Overseas Finders Fee to recruit internationally, and the recently launched 'Become a Teacher' marketing campaign to attract people to the teaching profession. We are also beginning to focus more on the distribution through the BeTTeR Scheme that matches teachers with schools, and through an updated 'hard-to-staff' definition and approach.
27. However, the TDS highlights the need to ensure that initiatives:
- are designed to increase teacher supply and are more heavily weighted towards secondary teachers
 - for primary level are more focussed on smoothing intra- and inter-regional supply.

28. 9(2)(f)(iv)

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29. Other longer-term work is also underway to review the suite of initiatives run by the Ministry that contribute to, or support, teacher supply. These include domestic and overseas initiatives, collective agreement provisions, scholarships, awards, and grants. The purpose is to understand their effectiveness and consider what changes should be made to scope and eligibility to ensure they deliver what the education system needs.
30. A refresh of the outdated 'hard-to-staff' definition is also underway which is expected to be critical in identifying our most persistently challenged schools, leading to a fairer distribution of the teaching workforce and improved targeting of our initiatives.

Future work to improve the quality of future workforce forecasting

31. The Ministry is also working on improving the TDS model to make it more detailed and useful to stakeholders.
32. Recent work to upgrade the TDS provides the opportunity for regional projections for primary and secondary. The purpose is to provide a more granular level of analysis to understand whether there are more pressing teacher supply challenges across different parts of New Zealand.
33. As this is a recent development, and further refinement and contextualisation is needed with the Ministry's Regional Directors, we have not included regional projections as part of the 2022 release of the Teacher Demand and Supply Projection. However, this will be an important resource in justifying a greater focus and resourcing on smoothing intra- and inter-regional supply differences. We will aim to publish this analysis for each region in 2023 as part of the next annual projection round. We will keep you informed during 2023 on the progress of this work.

Public release of the TDS

34. The Ministry intends to release the TDS with a supporting Appendix via Education Counts.
35. A communications plan will be shared with your office separately. To support its release the Ministry proposes to undertake the following communications activity:
- in confidence briefing for selected sector groups and media
 - issue a media statement on the Ministry's website.
36. The objectives of the communications are to:

- provide estimates of a range of supply scenarios over the next three years.
- explain to the sector and the public how current circumstances has made forecasting teacher supply more uncertain
- remind principals and school leaders that targeted supply initiatives are available to provide support for their recruitment needs in 2023; and
- demonstrate the Ministry is working proactively to make sure a supply of teachers is available for the sector's needs, including initiatives designed to support those areas where support is needed most.

Risks

Recruitment experiences from principals and peak bodies

37. One risk is that while at a national level the TDS projects a surplus, anecdotally we know that the situation at a regional or school level can be very different. We continue to hear from principals and peak bodies that recruitment remains a challenge.
38. From the payroll data, we know that terminations (the number of teachers leaving a role for any reason) is above average (Primary: 3283 YTD, vs 2589 at the same period in 2021, Secondary: 2605 YTD vs 1844 at the same period in 2021). Many of these terminations represent an increased level of movement between roles within the teaching profession, rather than a net loss of teachers to the overall system. However, from the perspective of an individual school, increased levels of 'churn' creates time and cost burdens from increased recruitment and can fuel a perception of challenge. This is compounded by the exceptionally high rate of sick leave experienced in the profession throughout 2022 (+92% when compared to 2021) and the consequential challenge of finding sufficient relief teachers.
39. 9(2)(g)(ii)
40. It will be important to reiterate in our public communications that the TDS should be viewed as an estimate at a *national* level. Many factors will impact the actual reality, such as teacher turnover, and the TDS should be considered alongside other teacher supply information, such as monthly retention rates, job advertisements and readvertisements, and qualitative information from the sector.

Recent teacher supply investment

41. One risk is that some may see the result of the TDS as meaning the September investment in teacher supply was unnecessary.
42. As outlined above, the Ministry took a preventative approach by acting mid-year because several indicators were heading in the wrong direction. Regardless, the TDS continue to show there remains challenges, particularly at secondary level, and support the allocation of investment that was is more heavily directed towards secondary teachers.
43. The communication package provided to you will include taking points to address these questions.

Annexes

Annex 1: Summary Report: Results from the Teacher Demand and Supply Planning Projection – December 2022

Proactively Released



Summary Report: Results from the Teacher Demand and Supply Planning Projection – December 2022

Summary

This is the fifth annual release of the Teacher Demand and Supply Planning Projection. This projection is constructed to forecast the number of teachers required by schools in the future, and to compare this with an estimate of how many teachers schools will be able to employ if there is sufficient demand. The results of this forecasting are used as an input into the Ministry's advice on teacher supply.

These projections are at the national level, so even in circumstances where supply meets demand at the national level, we still anticipate there will be an ongoing need to grow the supply of teachers to help some schools find the teachers they need. This will particularly apply in hard-to-staff subjects like te reo Māori and STEM (science, technology, engineering and mathematics), in the Māori-Medium/Kaupapa Māori (MM/KM) sector and in certain parts of the country—where a focus on supporting teachers to move into schools and regions that still have difficulty in recruiting staff they need, may be beneficial.

All results relate to the state and state-integrated school sector, based on teacher headcounts, and exclude day-relief teachers. That is, they relate only to 'regular' teachers employed by schools on a permanent or fixed-term basis.

Key Findings

- The demand for secondary teachers is projected to grow year-on-year out to 2025. In contrast, the demand for primary teachers is projected to drop year-on-year 2023 to 2026.
- Last year we noted an increased retention of teachers in the workforce—about 91% compared to the usual 89.5%. Estimates so far indicate that retention is returning to a pre-COVID level.
- In September, Cabinet agreed to allocate \$23.626 million to increase teacher supply by 177 domestic teachers and 760 international teachers (380 are provisionally allocated to secondary teachers and 190 to primary teachers) for the 2023 teaching year. These initiatives are targeted to address regional and subject-level pressures experienced by some schools and have been taken into account in the 2022 TDS projections.
- The teacher demand and supply projections make assumptions about key inputs (such as student numbers and teacher retention rates) and how these are likely to change over the coming years. While historically we have based these assumptions on past trends, these trends were significantly disrupted by the COVID-19 pandemic. Although COVID-19 restrictions have been lifted and borders have opened, there are questions about when (or if) key inputs will fully return to pre-pandemic trends. This results in an increase in the complexity in modelling the outlook for teacher demand and supply in New Zealand (albeit less so than the 2021 projections). We have addressed this complexity by again providing ranges based on two potential scenarios for how inputs track over the coming three years.
- In a 'low supply' scenario, lower retention rates of secondary teachers are assumed for 2023 and 2024, before scaling back to pre-COVID-19 retention rates from 2025. This scenario assumes a generally increased workforce exit rate for teachers, across all ages. Additionally, this scenario

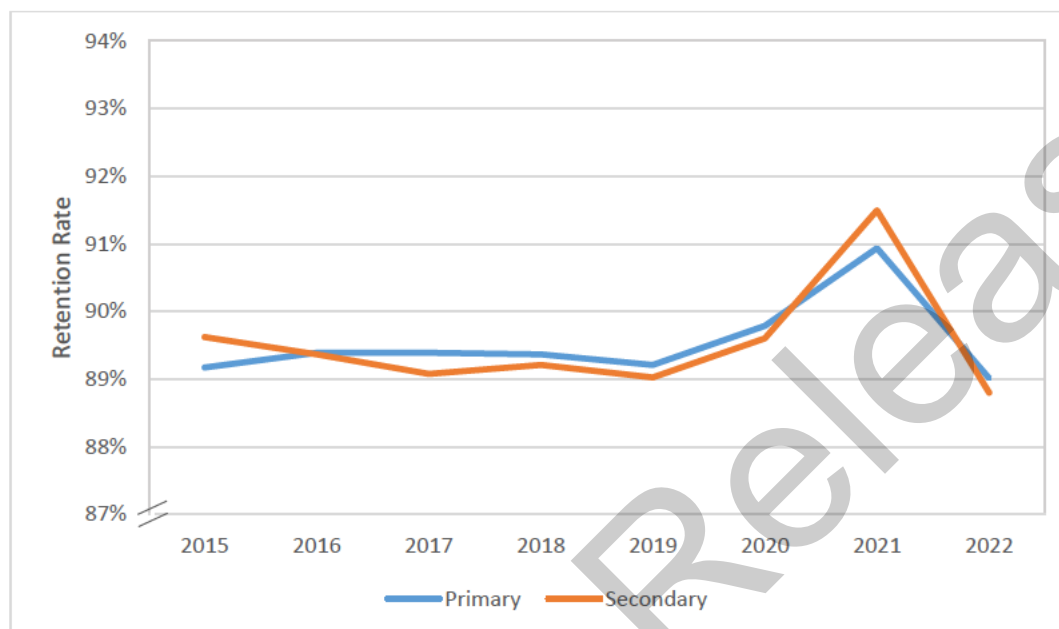
assumes a lower intake of additional teachers from the Ministry initiatives aimed at increasing teacher supply. In this scenario, we are anticipating that supply will be short of demand by about 40 to 620 secondary teachers in 2023–2025. In the primary sector, supply will exceed demand by about 640–1790 teachers in 2023–2025.

- In a 'high supply' scenario, pre-COVID-19 teacher retention rates are assumed to be in place from 2023 onwards. Additionally, this scenario assumes a higher intake of additional teachers from the Ministry initiatives aimed at increasing teacher supply. Under this scenario, supply will exceed demand by about 1,030–2,260 primary teachers in the years 2023 to 2025. In the secondary sector, supply will exceed demand in 2023 and 2024, by about 370 to 40 teachers, dropping to a shortage of 130 teachers by 2025.
- Over the coming years, the Ministry will likely continue development of new teacher supply initiatives to meet shortfalls in teacher supply in the secondary sector, to ensure schools have access to the right teachers according to their needs.

Teacher Retention

Figure 1 presents the latest results for the retention rate for primary and secondary teachers. The estimated 2022 retention rates of 89.0% for primary teachers and 88.8% for secondary teachers are back to the historical average. This estimation has a high degree of confidence as it is based on year-to-date payroll information up to November.

Figure 1. Retention rate of primary and secondary teachers.



The retention rate is the percentage of teachers at each age that remain in the 'regular' teaching workforce from the previous year's projection group. The retention rate is a key assumption for the Projection; a 1 percentage point change in the retention rate for 2022 results in a change of 370 primary teachers or 280 secondary teachers in 2022.

High and Low Supply Scenarios

There is unprecedented uncertainty around how the post COVID-19 environment will impact future retention. Given that retention is a key assumption for the Projection, a scenarios-based approach will again be used this year rather than a best-estimate approach.

A range of potential outcomes were explored by creating 'high' and 'low' teacher supply scenarios, using differing future teacher retention assumption profiles. These scenarios were based on alternative teacher retention rates, as these rates are the dominant assumption set for the projection. They also consider the potential success rates of the various Teacher Supply initiatives announced in 2022¹ designed to increase the inflow of teachers into the workforce.

In the 'high supply' scenario, pre-COVID-19 teacher retention rates are assumed to be in place from 2023 onwards. Additionally, this scenario assumes a higher intake of additional teachers from government initiatives aimed at increasing teacher supply. We have assumed an extra 680 overseas-trained secondary and 340 primary teachers starting in 2023. These figures include the impact of the September initiatives, combined with earlier initiatives designed to increase the numbers of overseas teachers that come to work in New Zealand. We also assume the Auckland ITE initiative yields around 80 extra secondary teachers in 2024.

Our 'low supply' scenario assumes lower retention due to an increase in younger teachers moving overseas and a generally increased workforce exit rate across all ages. Here, lower retention rates of teachers are

¹ [Government investing in 1000 more teachers and student learning affected by COVID-19 | Beehive.govt.nz](https://www.beehive.govt.nz/government-investing-in-1000-more-teachers-and-student-learning-affected-by-covid-19)

assumed for 2023, before returning to pre-COVID-19 retention rates from 2025. Additionally, this scenario assumes a lower intake of additional teachers from government initiatives aimed at increasing teacher supply. The corresponding numbers for the scheme described above are an extra 420 overseas-trained secondary and 140 primary teachers in 2023, and only 40 locally trained secondary teachers in 2024.

The table below provides a brief outline of the assumptions behind the 'high' and 'low' supply scenarios.

Table 1. Assumptions behind teacher supply scenarios.

Drivers	HIGH Supply	LOW Supply
	This is a scenario around where we return to a pre-Covid world in terms of retention and baseline inflows. We also assume a successful suite of Teacher Supply Initiative Programmes.	This is a more pessimistic supply scenario where Aotearoa New Zealand is less attractive for overseas teachers, and we see a greater exodus of teachers out of New Zealand.
Inflow	2016–2018 average as baseline. High success rate of teacher supply initiatives realised. This equates to an extra 680 secondary and 340 primary overseas-trained teachers in 2023. In 2024, we have modelled an additional 80 secondary teachers from the Auckland ITE initiative.	2016–2018 average as baseline. Lower success rate of teacher supply initiatives realised. This equates to an extra 420 secondary and 140 primary overseas-trained teachers in 2023. In 2024, only 40 secondary teachers enter from the Auckland ITE initiative.
Outflow	2018–2019 average exit rates as baseline.	2018–2019 average exit rates as baseline adjusted in 2023 and 2024 by +15% for teachers under 35 and by +5% for all other age groups

For both of these scenarios, the primary and secondary teacher demand curves remain unchanged. The demand curve is dependent on the key assumptions of the future number of students, teacher-to-student ratios and staffing entitlement.

It is important to remember that these are scenarios, not predictions, and illustrate a range of potential outcomes. These scenarios represent that, although more certain than 2021, there remain significant levels of uncertainty in how the teaching workforce will change and grow over the coming years.

Secondary Sector Projections

The demand for secondary teachers is projected to grow year-on-year, peaking in 2025 then declining out to 2028. The growth is sharpest between 2023 and 2024 with demand growing by 370 additional secondary teachers.

The longer-term trajectory for secondary teacher demand is overall very similar to previous estimates. The expected growth to 2025 is chiefly driven by a period of higher birth rates between 2008 and 2011 and several years of net positive migration of younger school-aged children. This means the number of students expected to finish at primary and move into secondary schooling looks set to steadily grow during the projection period. Demand in secondary is expected to peak in 2025.

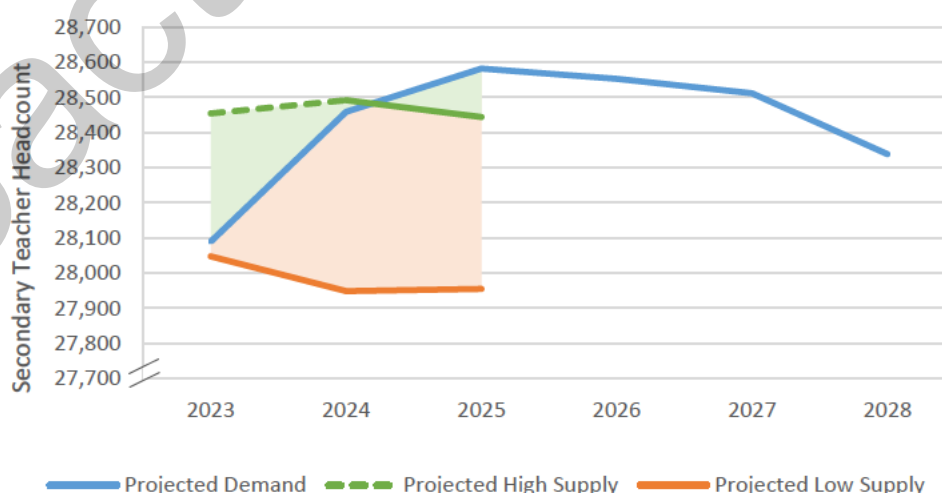
Table 2 and Figure 2 present the **high** and **low** supply scenarios projected for the total teacher supply and demand in secondary schools. The resultant estimated balance or 'gap' between demand and supply in each year is also shown in Table 2 and Figure 4.

Table 2. High and Low supply scenario projections (Dec 2022) of demand for and supply of teachers in the secondary sector.

Year	High Supply			Low Supply		
	Demand	Supply	Gap	Demand	Supply	Gap
2023	28,090	28,460	370	28,090	28,050	-40
2024	28,460	28,500	40	28,460	27,950	-510
2025	28,590	28,450	-130	28,590	27,960	-620
2026	28,560			28,560		
2027	28,520			28,520		
2028	28,340			28,340		

* Indicates that there will be sufficient supply to meet demand.

Figure 2. High and Low supply scenario projections of demand for and supply of secondary teachers.



Under a high teacher supply scenario, we anticipate that national supply will be sufficient to meet demand in 2023 (+370 teachers) and 2024 (+40 teachers) and will fall short by 2025 (-130 teachers). Under a low

teacher supply scenario, we anticipate that national supply will fall short of the estimated demand in all years from 2023 to 2025 by between –40 and –620 teachers.

The supply for secondary teachers in this projection, across both ‘high’ and ‘low’ scenarios, is more closely aligned to the ‘fast’ scenario in last year’s projections where we assumed borders would open sooner and retention rates would more quickly return to their pre-Covid levels than in the ‘slow’ scenario. The high scenario is 1,350 teachers below last year’s ‘slow’ scenario in 2023 and the low scenario is 80 teachers below last year’s ‘fast’ scenario in 2023. The overall ‘demand’ for teachers in 2023 in this projection has dropped by 630 teachers when compared to the previous projections, due to a lower forecast for school rolls. This is due to reductions in net migration expectations, record low student retention rates in 2022 and more students moving into home-schooling pathways.

In summary, at a national aggregate level, there may be a surplus of secondary teachers in 2023 and 2024 if a lower loss rate is observed and if initiatives to increase teacher supply are highly successful. However, there is some uncertainty regarding the after-effects of the COVID-19 pandemic and the subsequent post-pandemic economic outlook, which could increase the loss rate. If a higher loss rate is observed and the teacher supply initiatives are not as successful in attracting new teachers, then there might be shortfall of secondary teachers starting in 2023. Teacher supply projections for 2024 and 2025 do not include potential future policy changes. The supply gaps identified for 2024 and 2025 are likely to be offset by teacher supply initiatives developed and implemented in intervening years.

However, we anticipate there will still be an ongoing need to grow the supply of secondary teachers to help some schools find the teachers they need. This will particularly apply in hard-to-staff subjects such as te reo Māori and STEM (science, technology, engineering, and mathematics), in the MM/KM sector and in certain parts of the country—where a focus on supporting teachers to move into schools and regions that still have a difficulty in recruiting the staff they need may be beneficial.

Primary Sector Projections

The demand for primary teachers is projected to drop year-on-year out to 2026. This drop is driven by the expected decline in the numbers of primary students, reflecting a decline in birth rates. Whilst we are not currently projecting supply beyond 2025, the continued decline in demand into out-years suggests we may continue to see fewer role opportunities arising for new or returning primary teachers. This may result in a situation at a national level where there are more qualified primary teachers looking for work in the sector than there are vacancies.

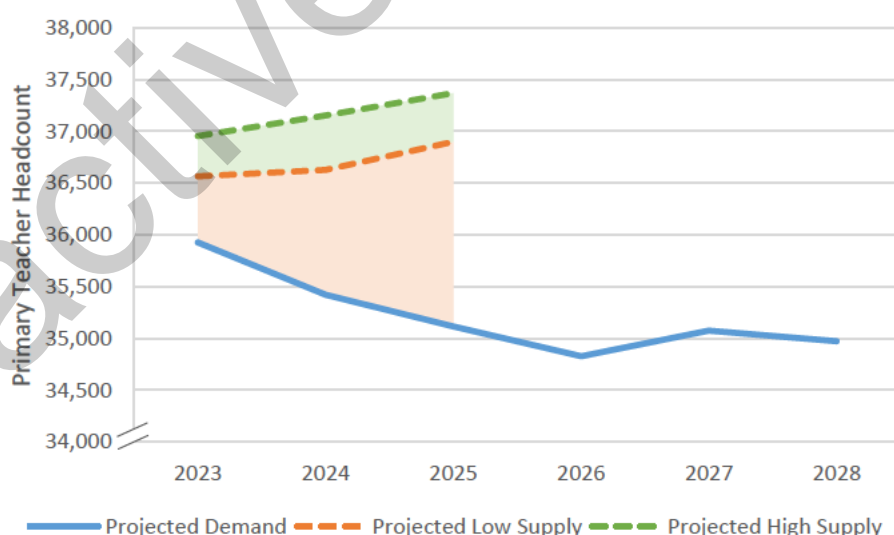
Table 3 and Figure 3 present the **high** and **low** scenario projected for the total teacher supply and demand in primary schools. The resultant estimated balance or 'gap' between demand and supply in each year is also shown in Table 3 and Figure 4.

Table 3. High and Low supply scenario projections (Dec 2022) of demand for and supply of teachers in the primary sector.

Year	High Supply			Low Supply		
	Demand	Supply	Gap	Demand	Supply	Gap
2023	35,930	36,960	1,030	35,930	36,570	640
2024	35,430	37,160	1,740	35,430	36,630	1,210
2025	35,120	37,370	2,260	35,120	36,900	1,790
2026	34,830			34,830		
2027	35,080			35,080		
2028	34,980			34,980		

* Indicates that there will be sufficient supply to meet demand.

Figure 3. High and Low supply scenario projections of demand for and supply of primary teachers.



Under a high teacher supply scenario, we anticipate that at the national level, primary teacher supply will exceed demand by about 1,030 teachers in 2023, 1,740 in 2024 and 2,260 in 2025. Under a low teacher supply scenario, we anticipate that at the national level primary teacher supply will exceed demand by about 640 teachers in 2023, 1,210 in 2024 and 1,790 in 2025. Supply will be more-than-sufficient to meet demand in both scenarios between 2022 and 2025.

The supply of primary teachers in these projections is lower than that previously projected in 2021. The high scenario is 2,120 teachers below last year's 'slow' scenario in 2023 and the low scenario is 1,030 teachers below last year's 'fast' scenario in 2023. This is principally because the lack of demand in the primary sector has constrained the growth of primary teacher supply as schools have only hired teachers in the numbers that they needed this year. As was seen in the secondary projections, the demand for teachers in primary is also lower than what was estimated in last year's projections. The demand projected for 2023 in this year's projections is 570 teachers below the equivalent figure in last year's projection. This again is due to the lower forecast for school rolls.

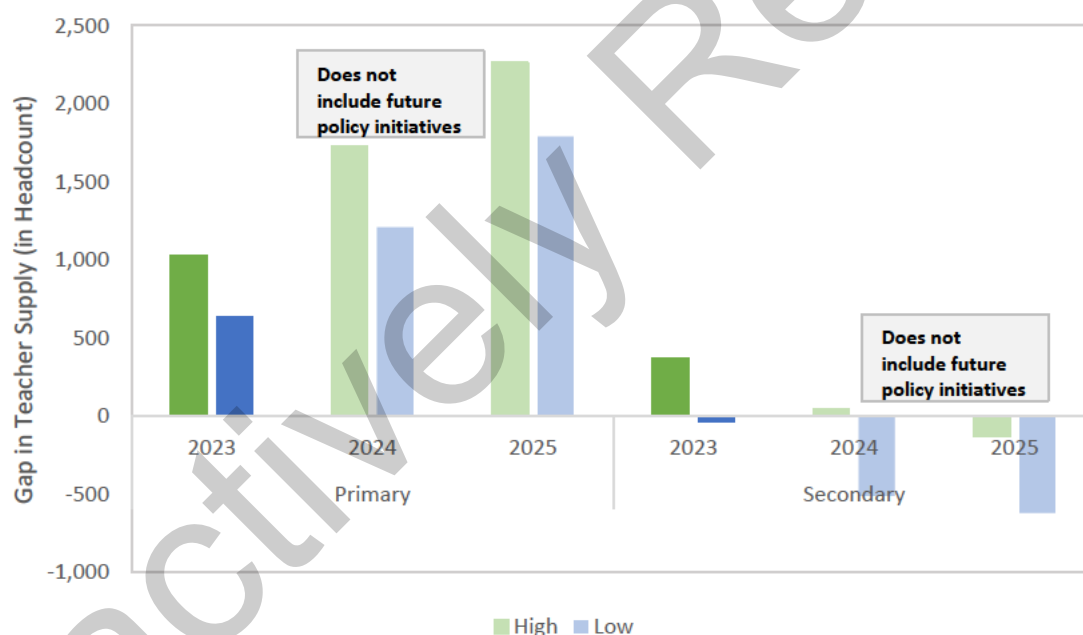
However, we anticipate there will still be an ongoing need to grow the supply of primary teachers in some hard-to-staff subjects such as te reo Māori, in the MM/KM sector and in certain parts of the country.

In summary, primary teacher supply will likely exceed demand at a national aggregate level. This is driven by multiple factors, including a projected decline in primary students as the number of students expected to finish at primary and move into secondary schooling looks set to steadily grow during the projection period. We will need to closely monitor teacher retention rates to provide an early warning in case a shortfall appears in the short-term.

It is important to remember that these are scenarios, not predictions, and illustrate a range of potential outcomes.

Figure 4 below shows the supply gap for both Primary and Secondary between 2023 and 2025.

Figure 4 Teacher supply gap for both primary and secondary teachers between 2023 and 2025.



Challenges of Modelling Demand–Supply at a Regional Level

These projections give us a picture of the national-level teacher demand and supply. The modelling shows we can expect a surplus of primary teachers over the coming years and possibly an initial surplus leading to an eventual shortage of secondary teachers over the next three years. However, this national-level projection might not be a true reflection of the regional or school-level picture of teacher supply where some regions/schools might face real challenges in finding enough teachers. While a theoretical regional-level modelling of teacher demand is possible, it is very difficult to predict the regional distribution of teacher supply with much accuracy.

The Ministry has undertaken work to address these challenges in regional-level teacher supply modelling by exploring proxy indicators for modelling purposes. Next year we plan to publish this exploratory analysis of regional-level teacher supply models.

How does the Projection work?

In simple terms, the Projection calculates the number of teachers we expect to need in the future (demand) and compares this to the number of teachers we expect to have in the future (supply). We look at trends in our data—such as in the number of students in our schools and the rates at which teachers enter and leave the workforce—and make assumptions on how these trends will continue into the future.

The Projection counts unique teachers on a headcount basis, recognising that a full-time teaching position in a school can be filled by more than one part-time working teacher. It includes both the teachers that are funded by government to meet teacher-student ratios and those that schools employ above entitlement from their own funds for a range of purposes, such as to cater for international students, to reduce the size of classes at certain year levels or to offer additional programmes or support for certain students. In 2017, around 3 per cent of primary school Full Time Teaching Equivalents (FTTE) were funded by schools above their entitlement, and likewise 7 per cent of secondary school FTTE.

To estimate the demand for teachers, we start with the current number of students in schools, predict how that will change in future, and translate it into a changing demand for teachers. We also factor in additional demand from newly established roles within the workforce (for example, in 2020, additional guidance counsellor roles funded through the Government's Budget 2020 student and educator wellbeing package) and other impacts on future demand driven by external changes in the educational environment.

The future supply of teachers is estimated using our payroll data. We count the current number of teachers in our schools, as well as looking at how many people leave or enter teaching positions each year. We know that an individual's age is important for predicting the point at which they will leave their role or start a teaching role. To make sure we capture this, we take the starting point for our calculations as the age profile of our current workforce. The Projection then projects the number of people coming and going from teaching positions by age, using the observed age profiles of previously leaving and entering teachers.

The projections are underpinned by assumptions based on trend information for key inputs and explicit modelling of initiatives designed to boost teacher supply in future. Our assumptions within the modelling of both demand and supply are aligned as closely as possible with those of other public sector agencies.

In this version, we are maintaining a six-year outlook for teacher demand, in line with previous releases. However, we are only projecting supply figures out to 2025, due to the highly uncertain nature of longer-term supply forecasts when taking future uncertainties into account. Our projections illustrate what will happen if our set of assumptions are realised. We will consider updating the Projection and publishing revised results outside of the usual annual cycle if significant shifts in the underlying assumptions occur.

A technical appendix providing a more complete guide to the methodology can be found alongside last year's projections. This has not been updated as the methodology remains largely the same as previous versions of the model with the changes in the implementation of the scenarios noted in this summary report.

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