



## Treasury Report: Further advice on costs and funding options for the next Census

<b>Date:</b>	31 January 2020	<b>Report No:</b>	T2020/171
		<b>File Number:</b>	SH-15-5

### Action sought

	Action sought	Deadline
Hon Grant Robertson <b>Minister of Finance</b>	<p><b>Direct</b> us to work with Stats NZ to seek the joint agreement of you and the Minister of Statistics to a technical change at MBU to reinstate the baseline for funding censuses.</p> <p><b>Agree</b> to support total funding for Census 2023 of \$232.5m operation and \$11.9m capital (of which a substantial portion could potentially come from the newly re-established baseline, and the remainder via Budget 2020).</p> <p><b>Refer</b> this briefing to the Minister of Statistics.</p>	10 February 2020

### Contact for telephone discussion (if required)

Name	Position	Telephone	1st Contact
██████████	Graduate Analyst, Economic Strategy and Productivity	██████████ (wk)	n/a (mob) ✓
Amy Russell	Principal Advisor, Economic Strategy and Productivity	██████████ (wk)	██████████ (mob)

### Minister's Office actions (if required)

**Return** the signed report to Treasury.

**Subject** to Minister's agreement, forward this report to the Minister of Statistics.

Note any feedback on the quality of the report

**Enclosure:** Yes (Final draft business case for Census 2023, dated 12 December 19)

## Treasury Report: Further advice on costs and funding options for the next Census

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### Executive summary

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We recommend in this briefing that you direct us to work with Stats NZ to seek the joint agreement of you and Minister of Statistics to reintroduce baselined funding for censuses. This will correct what appears to be an historical technical error in which the baseline was disestablished when a multi-year appropriation was created in 2007. We recommend that this in-year revision not be counted against Budget 2020 allowances.

If you agree, this will affect the amount of funding Stats NZ needs to seek at Budget 2020 to fund Census 2023. On this front, you recently received our advice that the total cost of Census 2023 be funded at Budget 2020 to the tune of \$231.5m operating and \$11.9m capital over 4 years [T2020/10 refers]. In this briefing, we update and add to our previous advice by:

- a explaining the impact of the newly proposed baseline re-establishment on the Budget 2020 process;
- b describing and recommending a new funding option for Census 2023 recently proposed to us by Stats NZ, which we think is a better option than the one we recently recommended to you for the same amount of funding (plus an additional \$1m contingency); and
- c responding to your query about why Census 2023 is so much more expensive than previous censuses, despite more intensive use of administrative data and an online survey instrument.

### Proposals

We recommend you direct us to work with Stats NZ to seek the joint agreement of you and the Minister of Statistics to re-establish a baseline for census funding, to be enacted via the March Baseline Update (MBU) as an in-year revision with no impact on Budget 2020 allowances.

We further recommend that you agree to support an outcome whereby Stats NZ is funded for a total of \$232.5m operating and \$11.9m capital over 4 years to deliver Census 2023. If you agree to our above-mentioned recommendations regarding the census baseline, then this would mean a substantial portion of funding for Census 2023 could be met from within the newly re-established baseline, with Stats NZ bidding for the remainder via Budget 2020.

We recommend that you forward this briefing to the Minister of Statistics.

## Recommended Action

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We recommend that you:

- a **note** that baselined funding for censuses appears to have been inadvertently disestablished when the multi-year appropriation was created in Vote Statistics in 2007.
- b **agree** to direct the Treasury to work with Stats NZ to prepare a briefing seeking the joint agreement of you and Minister of Statistics to reinstate the baseline, for action at the March Baseline Update;

*Agree/disagree.*

- c **agree** that this in-year revision should not count against Budget 2020 allowances

*Agree/disagree.*

- d **note** that, if you agree to recommendations b and c above, then Stats NZ's bid for Budget 2020 will comprise only that portion of funding not met by the newly established baseline;

- e **note** that Stats NZ has advised us of a new funding option for Census 2023 which we think is a better option than the one we recently recommended to you, for the same amount of funding (plus an additional \$1m contingency).

- f **agree in principle** to funding for Stats NZ of \$232.5m operating and \$11.9m capital over 4 years to deliver Census 2023, with the proportion to be sought at Budget 2020 to be determined based on your decisions in due course about the size of the newly established baseline.

*Agree in principle/do not agree in principle.*

- g **refer** this briefing to the Minister of Statistics.

*Refer/not referred.*

Amy Russell  
**Principal Advisor**

Hon Grant Robertson  
**Minister of Finance**

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### Purpose of Report

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1. This briefing first seeks your agreement to re-establish baselined funding for censuses, to correct what appears to be an historical technical error in which the baseline was disestablished. The briefing then:
  - a explains the impact of the newly proposed baseline res-establishment on the Budget 2020 process;
  - b recommends a new funding option for Census 2023 recently proposed to us by Stats NZ, which we think is a better option than the one we recently recommended to you for the same amount of funding (plus an additional \$1m contingency); and
  - c responds to your query about why Census 2023 is so much more expensive than previous censuses, despite more intensive use of administrative data and an online survey instrument.

### We recommend you agree to re-baseline funding for censuses

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2. Before 2007, funding for censuses was included in Stats NZ's operating baseline as a component of the output class *Population, Social and Labour Force Statistical Information Services*.
3. From 1 July 2007 a multi-year appropriation (MYA) was created "to provide for flexibility in planning for the 2011 Census of Population and Dwellings as a single programme over the five year cycle"<sup>1</sup>. The new MYA was populated with funding shifted from the baseline of the existing output class. However, apparently inadvertently, the baseline was not retained beyond the expiry of the MYA, but rather was deleted. Because the new MYA was time-limited, this effectively transformed baselined census funding into one-off project funding.
4. This change has generated the significant disadvantage that the whole cost of each five-yearly census must now be met at a single budget. This is not a good reflection of the BAU nature of census delivery, and significantly reduces Ministers' ability to fund competing priorities at the relevant budget.
5. We therefore recommend you agree to re-baseline census funding. To achieve this, we would work with Stats NZ to brief you and the Minister for Statistics to get your joint agreement to the technical change, which could then be enacted at MBU as an in-year revision. You could choose whether or not this should count against Budget 2020 allowances; we recommend not, as these allowances are already under significant pressure.

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<sup>1</sup> [Vote Statistics: Estimates of Appropriations 2007/08](#).

**We propose an approach to baseline funding that will protect Ministers' visibility of and control over the total cost of each census**

6. The main theoretical benefit of a time-limited, project-based approach for census funding is that it requires Stats NZ to participate in a robust and transparent bidding process for funding at each census. This gives Ministers assurance that Stats NZ is appropriately controlling its costs.
7. We propose to design baselined funding for census in such a way that this benefit is retained – specifically, by setting the baseline at a level such that Stats NZ would still have to bid for additional funding for any given census.<sup>2</sup> Ministers could then stipulate that any such bid must be accompanied by a business case giving a thorough ground-up costing model to explain the lifetime project costs of the proposed census.
8. This would essentially give Ministers the same controls and visibility as they have now, but with a much smoother funding profile at budget time.
9. Stats NZ has indicated it is comfortable with these broad proposals. Subject to your agreement, we will work through the details – including the proposed size of the baseline at reestablishment – as we prepare a joint briefing.

**Based on further advice from Stats NZ, we now recommend a new funding options for Census 2023 not mentioned in our initial advice**

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10. Census 2018, a “digital-first” census, achieved unacceptably low response rates overall and especially for Māori and Pacific populations. If Census 2023 also fails to achieve adequate response rates, this will (in the absence of any additional new standalone survey) create a 15-year gap in key data about New Zealanders. For this reason, it is extremely important that Census 2023 is adequately funded to achieve its critical objectives.
11. At the same time, Ministers are weighing many competing funding priorities at Budget 2020 and not every worthwhile initiative can be funded.
12. The Treasury has therefore been seeking a funding approach for Census 2023 that reduces the risk of under-delivery to acceptable levels, at the lowest possible cost. We provided initial advice recently as part of an omnibus briefing [T2020/10 refers, 24 January 2020]. Since then we have received another suggestion from Stats NZ which improves on our previous advice, as outlined below.

**We initially recommended an option between the “minimum viable option” and Stats NZ’s preferred option**

13. We recommended in our initial advice that Stats NZ receive funding of \$231.5 operating and \$11.9m capital at Budget 2020 to meet the cost of Census 2023 [T2020/10 refers]. This was \$37.6m less operating and \$0.8 less capital than Stats NZ’s preferred option as identified in its business case (Approach Two, which was costed at \$269.1m operating and \$12.7m capital), but \$5.75m more than the “minimum viable” option (Approach One, costed at \$225.7m operating and \$11.9m capital).

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<sup>2</sup> For example, Ministers could agree that the baseline should always be set at the average annual cost of the previous census (i.e. the total cost over five years, divided by five). In this way, provided the total cost of each census was always higher than the total cost of the previous census, Stats NZ would still have to bid for additional funding for any given census. The assumption of increased costs for the foreseeable future is reasonable in light of population growth, inflation, and the trend mentioned in paragraph 28.

14. Our advice reflected our judgement that it was worth spending a small amount of extra money to reduce the risk associated with Approach One, but not to the tune of the whole cost of Approach Two.
15. The attached business case provides more detail about Approach One and Approach Two. Note that costings in the business case do not include contingency funding, so are lower than the figures mentioned above.

**Stats NZ has now developed an improved alternative option for the same total cost (plus an additional \$1m contingency)**

16. Stats NZ has since advised that, if Ministers are willing to invest more than the cost of Approach One (but less than the cost of Approach Two) to help de-risk the minimum viable option, better alternatives exist than the particular “add-ons” suggested in the Treasury’s initial advice.
17. Stats NZ has suggested two new alternatives:
  - a **Option 1a** costs the same as Treasury’s previously proposed option plus an additional \$1m, contingency (i.e. a total operating cost of \$232.5m, which is Approach One plus \$5.75m plus extra contingency). But it spends the additional \$5.75m on different activities than those envisaged by the Treasury (see annex). Stats NZ advises that Option 1a would be expected to achieve the same expected response rates as the minimum viable option, but with lower risk.
  - b **Option 1b** costs \$9.3m more than Treasury’s previously proposed option (i.e. \$240.8 operating, which is Approach One plus \$12.9m plus extra contingency). Stats NZ advises that Option 1b would likely raise the expected response rates for Māori and Pacific populations, resulting in data of a “moderate” or higher quality level for all variables. In contrast, Option 1a has a significant chance of some variables being of “poor” quality due to response rates lower than 90%.
18. The table in the annex provides summary comparative information about each option’s costs and expected response rates. It also explains the difference between Treasury’s previously recommended option and Stats NZ’s proposed variation.
19. Based on this further information from Stats NZ, **we now recommend that you agree to Option 1a** – that is, the same amount of total funding as we previously recommended, plus an additional \$1m contingency, but targeted to a slightly different set of activities as determined by Stats NZ. We think this represents the best balance of value and risk, taking all things into account.
20. What this means for Budget 2020 will depend on your decisions about the re-establishment and potential size of a new census funding baseline, as discussed above.

**We are satisfied that the reasons for Census 2023 being more expensive than previous censuses are good and sufficient**

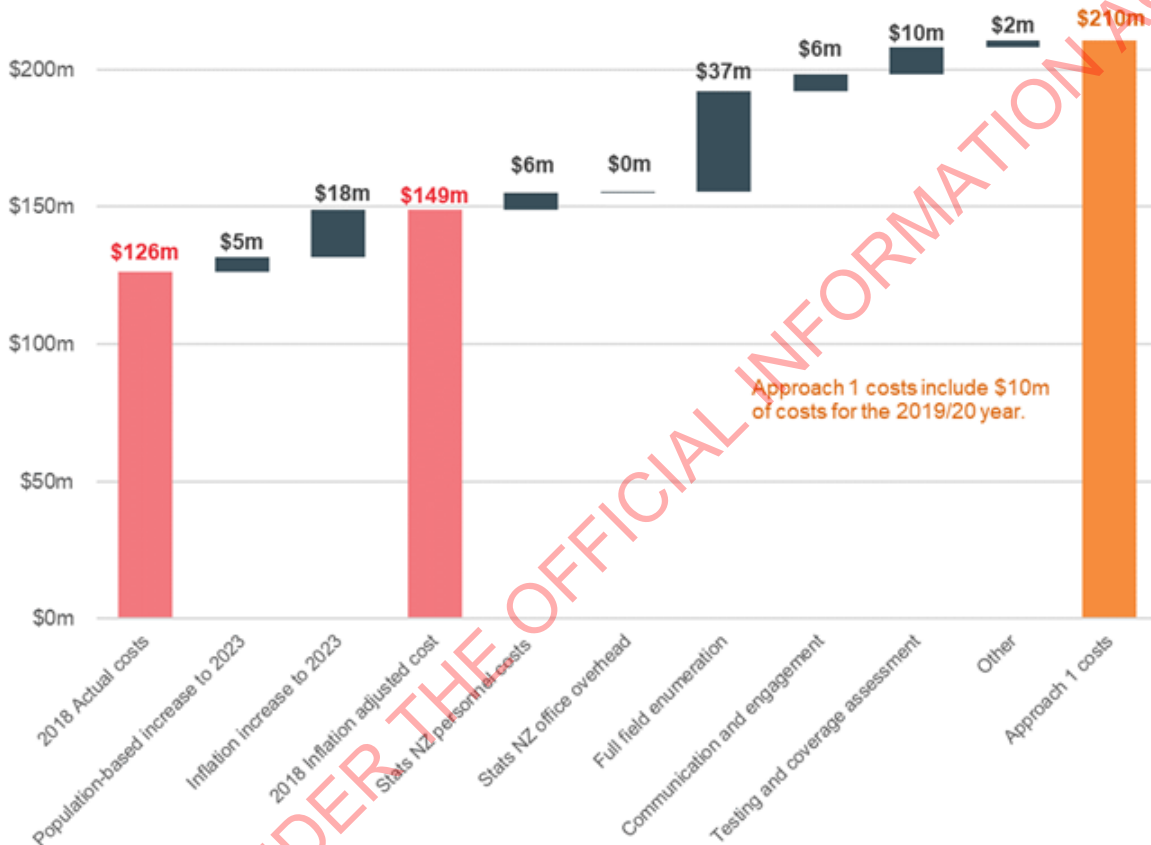
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21. You have noted that Census 2023 is set to be considerably more expensive than previous censuses, despite making more use of administrative data than hitherto.
22. Stats NZ’s costing model for Census 2023 is a detailed ground-up model. The Treasury has closely examined it and is satisfied that it is robust and that its assumptions are appropriate. The Gateway and Independent Quality Assurance reviewers of the Census 2023 business case reached the same conclusion.

23. Below we explain why the costs look as they do. Please note that the figures in this section are drawn from the Stats NZ business case for Census 2023 and do not include contingency funding, so differ from those in the Budget bid template.

**Census 2023 will cost more than Census 2018 because it needs to address problems with the way Census 2018 was implemented**

24. Given that Census 2018 achieved unacceptably low response rates, it should not be treated as a benchmark for appropriate costs for running a census. However, for your full information, the following chart from the Stats NZ business case (p.63) breaks down the increase in costs from Census 2018 to the minimum viable option (Approach One in the business case) for Census 2023.



25. This chart shows that \$23m of the \$84m total increase is due to inflation and the increased population size, leaving \$61m to be accounted for by other factors. The bulk of this \$61m (\$37m) is the increased cost of “full field enumeration”. This includes the total cost (recruitment, training, equipment and travel) of field officers: the people on the ground nationwide who door-knock and pay reminder visits to households. Stats NZ’s minimum viable option funds 4,897 such staff, compared to 1,753 at Census 2018. This reflects the finding of the independent review of Census 2018 that the field force was much too small to cope with need, resulting in unacceptably low response rates for some areas and population groups.

26. The next biggest component of the increase (\$10m) is testing and coverage assessment:

- a The testing increase is about making sure that systems and processes work as they should. Again, the increased cost reflects the findings of the independent review that these aspects of the census work programme were underfunded at Census 2018, resulting in unacceptable problems in achieving responses and smooth operations.

- b The increased cost in coverage assessment relates to the need to measure the coverage of administrative data as well as survey data to support the production of official population estimates and projections.
27. Pages 63 to 65 of the business case provide more detailed information about the comparative costs of Approach One compared to Census 2018.

**The proposed costs of Census 2023 are in line with international benchmarks**

28. Stats NZ's business case for Census 2023 notes that the costs of censuses are increasing in the UK, USA, Canada and Australia as well as in New Zealand. The main reason seems to be that the proportion of the population that is willing and able to fill in and return census forms without any prompting – the “low cost to serve” proportion – is falling, with a commensurate rise in the proportion requiring significant prompting and assistance to participate.
29. The per capita cost of Stats NZ's preferred funding option for Census 2023 (Approach Two in the business case) is about \$46 over the five-year period. This is in the ballpark of Canada's 2016 census (\$49 per capita; a five-yearly collection) and the USA's upcoming 2020 census (\$85 per capita; but for a ten-yearly collection). The per capita cost for Approach One (the minimum viable option) would be around \$40.

**Using administrative data alongside survey data can improve the quality of the output but doesn't reduce Stats NZ's costs**

30. After Census 2018, Stats NZ of necessity used administrative data held by government to fill in gaps in the data collected via the Census 2018 survey instrument. This had always been part of the plan for Census 2018, but Stats NZ's use of administrative data was accelerated and significantly expanded in light of low survey response rates. One benefit is that Stats NZ can now apply what it learned through this process to Census 2023.
31. A census conducted wholly using administrative data (i.e., no-one filling in forms) would be much cheaper to run than a regular census, at least once its infrastructure costs were met. However, for now, comprehensive survey data is still necessary to fill important gaps in administrative data (for example, iwi affiliation).
32. The costs of running the comprehensive census survey do not vary much according to how much administrative data is used to enhance the final dataset. Any savings from use of administrative data will accrue mostly to individuals (if, for example, they have to answer fewer questions), rather than to Stats NZ.

**A fully online survey instrument would lower the cost in time – but we know from Census 2018 that this isn't a good option just yet**

33. A fully-online survey instrument would lower the cost of implementing a census; and in future this may be feasible. However, Census 2018 demonstrated that a substantial and (in terms of data) very high-value minority of New Zealanders currently cannot or will not fill in and submit a census form online.
34. For this reason, and because of the higher risk mentioned at paragraph 10, Census 2023 needs to involve a mix of online and paper-based responses, with an appropriately sized field force to ensure response rates reach acceptable levels in priority populations. This is of necessity quite expensive.



## Next Steps

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35. If you agree, we will work with Stats NZ to prepare a joint briefing to you and the Minister of Statistics setting out options for re-establishing the funding baseline for censuses. Your joint decision could be actioned via MBU. In that event, we would work with Stats NZ to revise its bid for Budget 2020 funding in light of the new baseline.
36. If the baseline is not reinstated then Stats NZ's existing budget bid, and the advice we provide in this paper about our recommended funding level, remains relevant. In that event we would seek a decision from you in due course about your preferred funding approach so that we could give effect to it as part of Budget 2020.
37. We recommend that you forward this briefing to the Minister of Statistics.

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**BUDGET-SENSITIVE**

Annex: Table comparing new and existing options from Stats NZ

The table below gives the costs of the variety of funding options considered for Census 2023,

	Operating Cost	Operating Contingency (85 <sup>th</sup> percentile)	Total Operating	Capital Costs <sup>1</sup>	Total Capital	Target Individual Response Rate
<b>Option 1 (Approach One in business case)</b>	\$193.7M	\$32.0M	<b>\$225.7M</b>	\$11.9M	<b>\$11.9M</b>	Similar to 2013 Census (National 92%, Māori and Pasifika 88%, Asian 91%)
<b>Treasury's initial advice<sup>2</sup></b>	\$199.5M	\$32.0M	<b>\$231.5M</b>	\$11.9M	<b>\$11.9M</b>	Similar to 2013 Census with potentially some reduced risk, but not as big a reduction as Option 1a (National 92%, Māori 88%, Pasifika 88%, Asian 91%)
<b>Option 1a (now Treasury's recommended option)</b>	\$199.5M	\$33.0M	<b>\$232.5M</b>	\$11.9M	<b>\$11.9M</b>	Similar to 2013 Census with reduced risk (National 92%, Māori 88%, Pasifika 88%, Asian 91%)
<b>Option 1b</b>	\$206.6M	\$34.2M	<b>\$240.8M</b>	\$11.9M	<b>\$11.9M</b>	92% National, Māori 90%, Pasifika 90%, Asian 91%
<b>Alternative Scaled Back Option 2<sup>3</sup></b>	\$219.2M	\$41.6M	<b>\$260.8M</b>	\$12.6M	<b>\$12.6M</b>	Similar to 2006 Census with increased risk (National 94%, Māori 93%, Pasifika 92%, Asian 91%)
<b>Option 2 (Approach Two in business case; Stats NZ's preferred option)</b>	\$226.2M	\$42.9M	<b>\$269.1</b>	\$12.7M	<b>\$12.7M</b>	Similar to 2006 Census (National 94%, Māori 93%, Pasifika 92%, Asian 91%)

Notes:

1. Stats NZ intends to cover the cost of any required capital contingency within baselines.
2. Treasury's initial advice did not recalculate contingency funding in light of the additional \$5.75m. Options 1a and 1b do include a revised contingency.
3. As per the CFISnet template.

Treasury initially proposed that \$5.75 million be allocated over and above the minimum viable option. This was to fund a "with contact" Post-Enumeration Survey (\$2.75m) and enhanced comms activity (\$3m), both of which were included in Approach Two in the business case but not in Approach One. The aim was to reduce the risk of Approach One not delivering the necessary response rates.

Stats NZ has advised that a better approach for de-risking Approach One would be Option 1a, which would allocate the additional funding as follows (indicatively, and excluding contingency funding):

- \$0.4 million for additional online form development to lower barriers to response and reduce partial responses;
- \$0.9 million to increase the number of field hubs from 20 to 40 and/or to convert some field hubs into engagement centres more in line with their purpose in Option 2;
- \$0.8 million to be used in the field operation to compensate community organisations for their time and effort helping obtain responses and support recruitment of field staff;
- \$0.95 million for additional communications and engagement; and
- \$2.7 million to increase field staff numbers in geographic area where most needed to achieve response rate targets.

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