



**Te Kāwanatanga o Aotearoa**  
New Zealand Government

# Government Data Investment Plan 2022





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## What is the Government Data Investment Plan?

The Government Data Investment Plan (the Plan) is a 10-year plan of prioritised investment opportunities in data. The Plan is periodically updated; the first Data Investment Plan was commissioned by the Government Chief Data Steward and published in 2021.

### What is different about this new edition of the Plan?

This edition updates and expands on the first Data Investment Plan published in November 2021.

The 2022 Plan includes broader coverage of iwi-Māori data needs and a blueprint which provides additional information about our investment aspirations over the next three years.

The blueprint will be used to support the government to make investment decisions about what data assets to invest in, and when and how much to invest. It will be used to inform decisions across the government data system both through the annual Budget funding process, and when agencies are making internal funding decisions about data assets.

### Why do we need a Data Investment Plan?

Data has the ability to improve the lives of New Zealanders today and for generations to come. It is increasingly shaping our daily lives, our decisions, and our interactions. It is paramount for New Zealanders to have access to information they can trust.

The government holds and uses a vast amount of data on behalf of New Zealanders. This is an enduring asset that needs to be carefully curated. However, we cannot stand still; we must look to the future and identify the data needs of tomorrow.

The purpose of the Plan is to support government agencies to:

- maximise the value of our current data assets
- help Ministers invest strategically and sustainably to meet future needs
- assist iwi and Māori to work with the Crown to establish priorities for data investment to meet Te Tiriti responsibilities.

### What are the strengths and weaknesses of Aotearoa New Zealand's data system?

Aotearoa New Zealand's government data system has many strengths. These include robust statistical design, data standards, reliable detailed economic datasets, and innovative national wellbeing and social insight measures.

Aotearoa New Zealand is also considered a world leader in its use and integration of administrative data, and in the development and implementation of frameworks that engender trust in how data is used (e.g., Ngā Tikanga Paihere and Five Safes Frameworks, the Algorithm Charter for Aotearoa New Zealand, and the Data Protection and Use Policy).

While we should celebrate these strengths and continue to lead in these areas, we must also acknowledge there are frailties and key gaps in the government's data system.

This limits the data system's ability to support government, community, and individual decision making, as well as our ability to measure the outcomes that we are trying to achieve.

A major cause of our data limitations is that our investment in data can be piecemeal, uncoordinated, and tactical rather than cohesive and strategic. This leads to:

- inconsistent, duplicate, and patchy data especially in relation to iwi and Māori data needs
- critical gaps where no single programme has been able to make a case for investment
- delayed investments despite it sometimes taking 10 years to build a useful data set
- technological deficits, which impact the interoperability, accuracy, and reliability of the data system and reinforce the need for legacy systems
- difficulty in maintaining and improving practice in areas such as data security and data infrastructure.

### How will the Plan support a better data system?

This is the second year in a multi-year Plan that continues to explore our data assets, the infrastructure that surrounds them, and the capabilities required to unleash them.

The Plan has:

- helped government agencies, both individually and collectively, to understand their data assets and how they are used
- sought iwi-Māori input into the representation and presentation of Māori in government data and how data can be used to support the realisation of iwi-Māori aspirations.

The Plan provides the government with a comprehensive view of data asset investment opportunities. This supports a more strategic, coordinated, and systematic approach to data investment by:

- helping agencies make better (baseline funding) investment decisions relating to their existing assets
- helping agencies identify opportunities for improvement and to develop collaborative joint Budget bids
- supporting Ministers and system leads, the Treasury, the Government Chief Data Steward (GCDS), Government Chief Digital Officer (GCDO), and the Government Chief Information Security Officer (GCISO) to better understand the data asset investment environment.

## How does the Plan link to the Government Data Strategy and Roadmap 2021?

The *Government Data Strategy and Roadmap 2021* (the Strategy) published in September 2021<sup>1</sup> provides a shared direction and plan for Aotearoa New Zealand's government data system, offering a flexible foundation for agencies to work together and align their data initiatives.

The Strategy seeks an inclusive and integrated data system and has five objectives:

- people trust that the data they share with government will be collected, managed, and used safely and responsibly
- Māori and iwi have the data systems they need to fulfil their aspirations
- people and organisations have access to efficient, effective government services
- government decisions are informed by the right data at the right time
- government is held to account through a robust and transparent data system.

It is built around four focus areas:

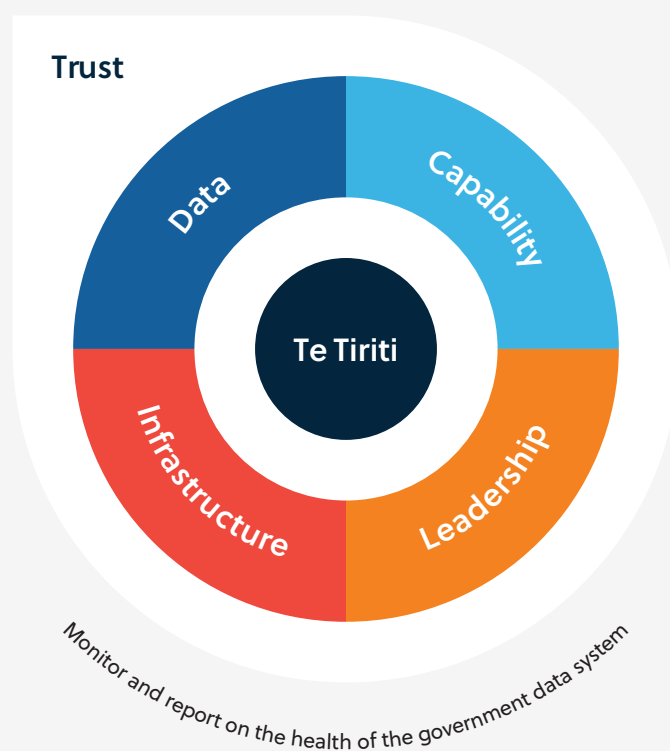
- Data
- Capability
- Leadership
- Infrastructure

and underpinned by a responsibility to uphold Te Tiriti and a commitment to maintain and enhance public trust and confidence.

The Plan is a companion document to the Strategy and should be read alongside it.

The creation and refresh of the Plan is a key initiative to action the Strategy's data focus area.

<sup>1</sup> <https://data.govt.nz/assets/Uploads/4e-government-data-strategy-and-roadmap.pdf>



## How are our data assets performing?

A multi-agency team performed a stocktake completed in April 2021, during which they assessed approximately 800 actual and potential data assets under 64 groupings. Detail on the stocktake process is provided in Appendix Two.

The stocktake identified 20 data asset groups (31 percent) spanning the society, environment, and economy pillars that were in need of major development. In the analysis, economic assets were found to be the best performing while the environmental assets required the most investment.

The stocktake also identified 12 cross-cutting populations of interest (half of which require major development) and six data asset groups that support Māori data needs and aspirations<sup>2</sup> (one-third need major development).

Finally, although the assessment of data infrastructure and capability will be considered in the future, the stocktake also assessed the data integration assets that are critical to realising the benefits of these data assets. Half of the four groupings needed major development.

### What assets were in scope of the stocktake?

Data assets refer to data products, infrastructure, and capability. Examples of data products include data measures like student achievement, data sets like the crime and victims survey data and climate data, and data tools like the Integrated Data Infrastructure (IDI).

The stocktake (and by extension, this Plan) assessed only Essential Data Assets. Essential Data Assets are distinguished from other data assets by virtue of their strategic importance to the government. They are used to:

- develop public policy and make critical decisions
- measure the social, environmental, and economic progress of New Zealand
- fulfil domestic legislative requirements and our responsibilities under Te Tiriti o Waitangi
- satisfy international reporting obligations.

### What assets are in greatest need of investment?

The table below presents the findings of the Essential Data Asset stocktake by the 64 groups. The totals exceed 64 because some data groups have more than one data asset.

Pillar/dimension <sup>3</sup>	Generally fit for purpose	Some development needed	Major development needed
Economy	13	5	3
Environment	0	8	10
Society	4	14	7
Populations of interest	1	5	6
Data integration assets	1	1	2
iwi-Māori data needs and aspirations	1	3	2

<sup>2</sup> <https://www.kahuiraraunga.io/tawhitinuku>

<sup>3</sup> Alignment of the stocktake to the Treasury's Living Standards Framework was performed at the opportunity level. This is described in Appendix 4

All categories and associated data products under the environmental pillar require some or major development. There are major data gaps in understanding Aotearoa New Zealand's water quality and availability; ecosystems and the benefits Aotearoa New Zealand as a country derives from these systems; the generation and life cycle of waste; land use; natural disasters and the impacts of climate change.

The society pillar, iwi-Māori data needs and aspirations, and populations of policy interest dimension, contain some robust data products, but most categories require some or major development. There are major gaps in data about children, migrant populations, iwi-Māori wellbeing, and geographic communities smaller than the regional level.

Data products that make up the categories under the economy pillar have had the most investment over time and, consequently, are the most well developed. This is because they comprise the largest number of Tier 1 Statistics – a list of high priority statistics approved by Cabinet in 2012.

## What are populations of interest?

Populations of policy interest have been included in the stocktake as a cross-cutting dimension across the key pillars of society, environment, and economy.

The stocktake has identified specific Essential Data Assets for the following populations:

- Pacific peoples
- migrants (including refugees)
- ethnic minority groups
- women
- sexually and gender diverse people
- disabled people
- seniors
- children
- whānau/families
- geographic communities
- socially and economically excluded groups (e.g., chronically unemployed, prisoners, digitally excluded people, and homeless people).

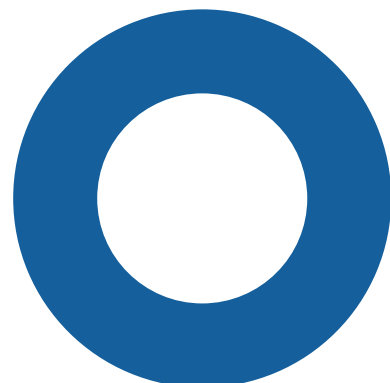
## What are data integration assets?

Essential data integration assets include the portals, dashboards, and tools that are used to bring together and disseminate data critical for decision making, monitoring progress, and research. The highest profile of these tools are the Integrated Data Infrastructure and the Longitudinal Business Database.

Essential data integration assets also include a range of statistical frameworks and standards, core national registers (e.g., business, people, property, address, and biodiversity), and national datasets (e.g., imagery, rivers, and roads) and models.

## What are iwi-Māori data needs and aspirations?

In the context of this work, iwi-Māori data needs and aspirations refer to building the capacity and capability of iwi-Māori for the collection, management and governance of iwi-Māori data, and those data asset groups that support iwi-Māori data needs and aspirations.





## How do we ensure that our findings reflect the aspirations of iwi-Māori?

We have used the Mana Ōrite agreement between Statistics NZ and the Data Iwi Leaders Group to guide our engagement with Māori, helping to identify essential data assets and investment opportunities important to Māori Data Aspirations.

### What is the Mana Ōrite relationship?

The Data Iwi Leaders Group and Stats NZ have agreed to describe their Te Tiriti o Waitangi relationship as a Mana Ōrite relationship rather than a Treaty partnership, an acknowledgement that one of the most critical principles of Te Tiriti is the enduring relationship between the Crown and iwi and hapū.

Mana Ōrite is understood as the parties having equal explanatory power within the operation of the relationship. This means that the parties acknowledge and accept each other's unique perspectives, knowledge systems and world views as being equally valid to decisions made under the relationship.

In 2019, Stats NZ and the Data Iwi Leaders Group signed the Mana Ōrite Relationship Agreement as a commitment to work together through agreed relationship principles, goals, and deliverables that will give effect to the Mana Ōrite relationship.

It was the first agreement of its kind between iwi-Māori and the Crown and solidifies the value of data-driven insight in the growth and prosperity of Aotearoa New Zealand.

### What are the goals of the Mana Ōrite relationship?

Through working together and leveraging their strengths, the Data Iwi Leaders Group and Stats NZ seek:

- to embed a te ao Māori lens in the way in which decisions are taken across the public sector data ecosystem
- to develop strategies and policies, including operational approaches, that enable the current and future data needs and aspirations of iwi-Māori throughout Aotearoa New Zealand to be met more effectively
- stronger engagement and relationships between Stats NZ, iwi and hapū across Aotearoa and the capability to sustain these over time
- iwi-Māori having improved access to iwi-Māori data and enhanced co-design opportunities
- to identify and resolve key data gaps for iwi-Māori in partnership with iwi-Māori
- equity of outcomes with respect to iwi and iwi-Māori data across the public data ecosystem to support decision-making and investment.

### How has the development of the Plan included the Mana Ōrite relationship?

It is of critical importance that the Plan is relevant to iwi-Māori, reflect te ao Māori views, and support a system where data is designed, collected and analysed in partnership with Māori in line with Te Tiriti o Waitangi expectations. To achieve these objectives, our consultation and collaboration process is continuous and multi-layered.

The stocktake of data assets was informed by a substantial body of knowledge, including the Whānau Ora Outcomes Framework and Te Puni Kōkiri's te ao Māori wellbeing measurements. The consultation also extended to Te Mana Raraunga (the Māori Data Sovereignty Network).

The Plan's prioritisation framework and approach were reviewed and supported by the Data Iwi Leaders Group.

This current iteration of the Plan benefits from continued engagement with the Data Iwi Leaders Group and includes a broader engagement with a range of iwi and iwi-Māori organisations which use iwi-Māori data in their day-to-day operations. This consultation has resulted in a substantial shift beyond gaps in datasets. Four thematic areas were identified and included in the Plan:

- infrastructure – to enable iwi-Māori data to be held and integrated with other data, without having to transfer Māori data to the Crown
- governance – to develop settings and guidance for the management of data so that a te ao Māori lens is built into decision-making and give effect to Te Tiriti
- devolved access and control – to enable access and control to be located much closer to communities
- capacity and capability – to ensure that Māori communities are well supported to build data capacity and capability.

This led to the introduction of three new investment opportunities:

- Māori data governance
- Māori data capability
- Māori data infrastructure

## What are our highest priority investment opportunities?

During the stocktake of Essential Data Assets, many potential investment opportunities were identified.

These were subsequently refined to create 90 investment opportunities that were scored against approved evaluation criteria.

The development of assessment criteria and the process to prioritise opportunities is described in Appendix Two.

### Are there any themes in the prioritisation results?

A summary of the prioritisation process results is presented in the table below. Key themes from the results include the following:

- the Economy pillar opportunities tended to be of lower priority. This is a reflection of how economic data asset groups were generally the most well developed. The least developed economic data assets tended to be those relating to Household Economic Wellbeing, which are also markers of social wellbeing
- the Environment pillar opportunities tended to be of higher priority. This reflects the relative weaknesses of the data available in the Environment pillar
- data integration assets are a high priority because benefits are realised faster from better management and integration of existing assets than from investment in new datasets
- many opportunities in the Economy and Society pillars have a focus on supporting populations of interest, including those of high priority. Opportunities in the Populations of interest pillar are more cross-cutting in nature
- eight opportunities in the top 33 were identified as enabling Iwi-Māori data needs and aspirations – these have been presented in this Plan in the pillar to which they align. Opportunities include *'More accurate and frequent measurement of population'* and *'Consistent measurement of ethnicity across government'*, both of which are in the Society pillar.

Pillar	Top 33	Next 60	Total
Economy	7	27	34
Environment	7	4	11
Society	8	19	27
Populations of interest	4	8	12
Data integration assets	4	2	6
iwi-Māori data needs and aspirations <sup>4</sup>	8	1	6

<sup>4</sup> Included within other pillars

## What are the highest priority investment opportunities?

The top investment opportunities from each pillar and dimension are described below, with the full listing provided as Appendix Three. Alignment of the top 30 opportunities to the Treasury's Living Standards Framework is provided as Appendix Four.

### Economy pillar

#### Granular housing affordability and homelessness measurement

<b>Current state</b>	Data on housing affordability and homelessness has been produced using the Integrated Data Infrastructure (IDI), but further work is required to develop robust measures. In particular, data is needed for populations of interest, which requires additional integrations to measure at the appropriate level of disaggregation.
<b>Opportunity</b>	If a further investment is made in the IDI, data on housing affordability and homelessness will be able to be produced more quickly, on a more granular basis, and with an improved focus on populations of interest.
<b>Status</b>	Responsible Agency has initiated a proposal to fill the gap.
<b>Responsible agencies</b>	Ministry of Housing and Urban Development.

#### Improved insights on child poverty and energy hardship

<b>Current state</b>	Understanding and monitoring the numbers and characteristics of households experiencing material hardship and/or poverty is essential for monitoring the Child Poverty Reduction Act 2018 as well as evaluating the effectiveness of interventions. The Living in Aotearoa Survey began data collection in 2021/22 and the first results of persistent child poverty will become available from 2024. Additional investment may be needed in the future to address child poverty amongst homeless children.  MBIE has developed a draft framework to measure energy hardship.
<b>Opportunity</b>	If households and living arrangements can be better identified in data (e.g., whānau as an economic unit), then a more nuanced understanding of child poverty can be achieved. Additional data can provide ancillary benefits; for example, by better measuring energy hardship, the Ministry of Business Innovation and Employment can better set policy and regulate the energy sector.
<b>Status</b>	Responsible Agency has initiated a proposal to fill the gap.
<b>Responsible agencies</b>	Stats NZ. Ministry of Business, Innovation and Employment.

## Environment pillar

### Nationally Consistent measurement of land use over time at the parcel level

<b>Current state</b>	The Land Cover Database (LCDB), maintained by Manaaki Whenua – Landcare Research and funded by MBIE, is a nationally comprehensive land use map of Aotearoa New Zealand covering the dates 1996, 2001, 2008, 2012 and 2018. However, the LCDB does not have ongoing funding for updates and by itself does not provide a measure of land use to link local activities to local change. There are insufficient monitoring sites to provide reliable measurement of soil erosion, good data on soil health, and detailed elevation mapping across Aotearoa New Zealand and outlying islands.
<b>Opportunity</b>	Improved data on land, including its profile and its use, would enable a better understanding of our greenhouse gas profile, water pollution (nutrient and particulate), the impact of removing vegetation on the flow of ecosystem services from native vegetation, and natural disaster risk profile.
<b>Status</b>	Responsible Agencies plan to work with other agencies to investigate funding avenues.
<b>Responsible agencies</b>	Ministry for the Environment. Ministry for Primary Industries.

### Enhanced and standardised climate change data

<b>Current state</b>	There is an increasing need to monitor the sources of emissions and impacts of climate change (e.g., impacts of climate change on biodiversity). Data on hazards, impacts, and vulnerabilities is needed to evaluate resilience and drive adaptation and mitigation strategies (e.g., forecasting and managing water inundation).
<b>Opportunity</b>	If emissions are monitored well, it will be possible to keep stock of our carbon inventory and meet our national climate goals. Maintenance of the Greenhouse Gas Inventory is important for international reporting.
<b>Status</b>	A new set of climate projections that reflect advancements in scientific knowledge and modelling techniques is expected to be delivered in 2024.
<b>Responsible agencies</b>	Ministry for the Environment. Ministry for Primary Industries.

## Society pillar

### More accurate and frequent measurement of population

<b>Current state</b>	Aotearoa New Zealand's population statistics are at risk of degradation as response rates to the Census continue to decline and as external migration movements make it increasingly difficult to accurately model population change between Censuses.
<b>Opportunity</b>	Increased use of administrative data as an alternative to traditional census-taking has the potential to increase the frequency and timeliness of detailed census data. Improved population data has implications across government – for example, in determining health funding and setting electoral boundaries. There is also an opportunity to align with iwi-hapū concepts. This opportunity is an iwi-Māori priority.
<b>Status</b>	Stats NZ's Census Transformation Programme undertook a series of investigations based on the 2013 Census to assess the ability of administrative data sources to provide census-type information. This work was accelerated in response to the 2018 Census (especially regarding iwi-Māori population data). The Census Transformation Programme has continued in the lead-up to Census 2023.
<b>Responsible agencies</b>	Stats NZ. All government and non-government bodies that hold relevant administrative data.

## Society pillar

### Consistent measurement of ethnicity across government

<b>Current state</b>	Peoples' ethnic identity includes the ethnic group(s) they identify with or feel they belong. Currently, there are differences in how ethnicity is defined in administrative data; for example, Māori can identify themselves by ethnicity, descent, or iwi affiliation, and Fijian Indians can be classified as Pacific Peoples or Indian depending on how data is collected and aggregated.
<b>Opportunity</b>	If more consistent definitions of ethnicity are applied across administrative data sources, data will be more readily able to be used and combined, enabling better insights to be drawn from multiple data sources.
<b>Status</b>	Stats NZ has begun a review of both the ethnicity and mandated standard process.
<b>Responsible agencies</b>	Stats NZ.

### Iwi-Māori data needs and aspirations dimension

#### Māori data governance\*

<b>Current state</b>	Data has the potential to make a significant difference to outcomes for iwi, hapū and whānau. To make this difference, data needs to be relevant to iwi-Māori, reflect te ao Māori views, and be collected by and with iwi-Māori in line with Te Tiriti o Waitangi expectations.
<b>Opportunity</b>	Designing, establishing, and investing in infrastructure for Māori data governance provides an opportunity to make a fundamental shift in the data system to benefit iwi-Māori.
<b>Status</b>	Work to address this need has been initiated.
<b>Responsible agencies</b>	Stats NZ.

\* This investment opportunity was identified as a priority by iwi-Māori during the 2022 engagement process.

## Iwi-Māori data needs and aspirations dimension

### Māori data capability\*

<b>Current state</b>	There is a need for investment in the capability of iwi-Māori so that they can: <ul style="list-style-type: none"> <li>• design and collect data of meaning to them</li> <li>• access and analyse data that is collected by government and other sources and make sense of what this means for iwi-Māori aspirations.</li> </ul>
<b>Opportunity</b>	Investment in building iwi-Māori capability to design, collect, analyse, and interpret data will enable iwi-Māori to realise the benefits of data. It will enable them to action the insights from data to improve the quality of life of iwi-Māori and be a good kaitiaki of the environment.
<b>Status</b>	Stats NZ has a work programme on iwi-Māori data capability.
<b>Responsible agencies</b>	Stats NZ.

## Populations of policy interest dimension

### Improved data on the wellbeing of children

<b>Current state</b>	There is limited availability of data to monitor the wellbeing of children and their resilience. This has made it difficult to form a meaningful picture of how children are doing as a group (e.g., there is a lack of data reflecting the child's view) and across different sub-groups. There is a need for data that provides comprehensive coverage of different domains of wellbeing.
<b>Opportunity</b>	If child wellbeing can be measured using a more comprehensive set of measures and at a more granular level, then agencies will be able to better understand how children are faring and identify areas in the system where intervention is required. The use of internationally comparable measures would enable agencies to benchmark Aotearoa New Zealand against other nations.
<b>Status</b>	Programme of work is underway.
<b>Responsible agencies</b>	Department of the Prime Minister and Cabinet.

### Enhanced visibility of populations of policy interest

<b>Current state</b>	Currently, there is limited data on populations of policy interest. The existing data is often unreliable because it is generally sourced from household sample surveys (e.g., data on the wellbeing of Pacific Peoples).
<b>Opportunity</b>	Adding attributes to administrative data (to enable the identification of populations of policy interest) will facilitate better integration of data, providing greater visibility of these sub-populations. When used with appropriate measures to protect privacy and confidentiality the data will provide better understanding of the needs of these sub-populations.
<b>Status</b>	Stats NZ does not have this in train as an independent project. It would benefit from a sector approach.
<b>Responsible agencies</b>	Stats NZ.

\* This investment opportunity was identified as a priority by iwi-Māori during the 2022 engagement process.

## Data integration assets dimension

### Strengthened Integrated Data Service

<b>Current state</b>	<p>The Integrated Data Service delivers microdata about people and households via the Integrated Data Infrastructure (IDI) and data about businesses via the Longitudinal Business Database (LBD).</p> <p>The Integrated Data Service has grown considerably in the last seven years, with the IDI supporting over 700 customers working on around 300 different projects. It receives about 100 new project applications each calendar year. The use of the IDI is evolving and increasingly being used to solve real-time problems (e.g., assess wage subsidy effectiveness during COVID) rather than being limited to research.</p> <p>The IDI is also of increasing interest to iwi-Māori, both in terms of data sovereignty and in developing specific insights pertaining to iwi-Māori.</p>
<b>Opportunity</b>	<p>The service is integral to work across the system, but there is more value that could be gained by increasing the service offering for government users, expanding the customer base, looking to partner to provide more direct impact for communities across Aotearoa New Zealand, and work more closely with Treaty partners to enable achievement of their data aspirations. There is also an opportunity to improve data quality (consistent data and metadata) so that the IDI becomes more widely usable.</p>
<b>Status</b>	Stats NZ and contributing agencies have a continuous improvement approach in place.
<b>Responsible agencies</b>	Stats NZ. Contributing agencies.

### Additional registers and foundational data

<b>Current state</b>	<p>A register is a continuously updated set of objects for a defined population. It is the sole authoritative source of that information, kept complete, accurate and up to date. For example, the companies register administered by the Companies Office is the single, authoritative data source for company information. Key features of a register are persistent unique identifiers, immutable entries, and live data.</p> <p>Currently, there is no statistical person register in Aotearoa New Zealand. Additionally, the business, property, address, district valuation roll, and biodiversity registers require further investment. Foundational data such as imagery, LIDAR, rivers, and roads centrelines are needed to underpin other data.</p>
<b>Opportunity</b>	<p>If more registers are established, then data will be updated more frequently, be of higher quality, and be more readily linked to other datasets. This will enable more timely and rich insights as well as an improved focus on populations of policy interest. The establishment of registers needs to take account of social licence and be supported by sound governance to ensure ongoing public trust and confidence. This opportunity is an iwi-Māori priority.</p>
<b>Status</b>	Responsible Agency has initiated a proposal to fill the gap.
<b>Responsible agencies</b>	Stats NZ. Contributing agencies.

## How will this Plan be implemented?

This Plan is a guiding document for future decisions to enable better targeting of resources across the system, it is not specifically funded or directive. As a result, each investment opportunity will require funding – either from baseline or through the Budget and infrastructure investment pathways.

### When investments are likely to occur?

Engagement with iwi-Māori in 2022 led to the addition of three new investment opportunities in the Plan. This brought the number of top investment opportunities to 33. These 33 investment opportunities contain opportunities that are already in train, those that are expected to result in a Budget bid in the next two years, and new initiatives that will require substantial development before they are investment ready. Some opportunities have dependencies on other programmes across government which means they can't be implemented at this time; others are subject to delivery constraints.

Implementation considerations have helped to form an early, indicative delivery roadmap for the next ten years (Appendix Five). This roadmap has been refined in consultation with Responsible Agencies. This has provided more detail on investment opportunities that will occur in the first 3 years and has led to changes in the indicative delivery roadmap. The roadmap will be reviewed and validated each year and presented with each new iteration of the Plan.

### How will the Plan impact future Budget processes?

The Plan will play an important role in informing longer-term, strategic investment decisions made through the Budget process in two key ways.

First, the process of developing the Plan is helping agencies to identify opportunities for improvement and to develop and align joint Budget bids.

Secondly, the Plan supports the Government Chief Data Steward (GCDS) to work with fellow system leads for Digital and Cyber Security to enable and support the public sector to deliver better outcomes for the people of New Zealand. By aligning these functions, it will enable agencies and Ministers to consider digital, data, and information security needs as a whole and to ensure a secure, efficient, and high-quality supply chain or 'pipeline' of information, to produce meaningful insights and for the design and delivery of public services. In addition, New Zealanders will have accessible and integrated access to government services.

The GCDS also works with Investment Officials (The Public Service Leaders for Property, Procurement, Data, Digital, Information Security, Service Transformation and Regional leadership, with responsibility for providing collaborative stewardship of the investment management system) to develop annual Budget guidance, strengthen the planning phase within the investment lifecycle and to provide advice to the Investment Ministers on Budget bids.

The GCDS has been authorised and directed to support agencies to deliver the Plan. The GCDS has been mandated to coordinate investment across the government data system. This includes:

- helping agencies to deliver within the scope of their responsibilities and functions (including within baseline)
- providing system and tailored support to build capability and capacity to deliver the Plan
- fostering collaboration to improve the quality of data and to develop strategic approaches to collecting and sharing the data
- providing leadership in areas where there are competing interests and tensions.

### How will the Plan impact existing activities?

While the Plan identifies and prioritises Essential Data Assets for new and/or further investment through the Budget process, there are also implications for ongoing data asset management.

The Plan highlights the state of the data system's Essential Data Assets and reinforces the need for the system to play an active and responsible role in maintaining these assets through baseline funding, in the same way as agencies undertake standard capital asset management on behalf of New Zealanders.

### What about non-prioritised assets?

The Plan does not preclude or impinge on investment in opportunities that have not been prioritised in the Plan or are out of scope.

Agencies and the system, in general, will continue to be flexible and able to respond to ad-hoc and changing data needs, as has been reinforced by our response to COVID-19.



## What's next?

This is the second iteration of the Plan, which prioritises opportunities for investing in data products. It includes broader coverage of investment opportunities to deliver for Māori data aspirations and updates the timing and status of some investment opportunities. Future iterations of the Plan will build on the engagement with iwi-Māori, reflect shifting priorities and evolving technologies as well as have an increased focus on infrastructure (including alignment with digital infrastructure priorities) and capability required to support the data system.

The Plan will be refreshed periodically to reflect progress, shifting priorities and evolving technologies.



## Appendix One – Glossary

**Administrative data** – data collected as part of the day-to-day business processes and record keeping of organisations.

**Classification** – a set of categories that represent distinct classes, groups, or attributes of data.

**Data Gap** – data Gaps are agreed limitations in the data currently available. Data Gaps will range from remedial issues (e.g., the need for improved quality of existing data) through to the need to develop new measures, collect new data or produce more granular data (e.g., for particular populations of public policy interest). A data gap can include gaps in the capability to use data or limitations with the infrastructure to access and use data.

**Dimension** – a view in the Data Investment Plan taxonomy that cuts across the pillars. There are three dimensions: Māori data aspirations; Populations of policy interest; and Data integration assets.

**Domain** – Essential Data Assets in each pillar of the Data Investment Plan taxonomy are further organised into domains, which each represent a topic or topics.

**Essential Data Assets (EDA)** – includes statistics, datasets and data infrastructure that are needed to generate insights and support critical decisions. Because they are reused over time, they need to be maintained to ensure they continue to deliver value.

**Government Chief Data Steward (GCDS)** – the government system lead for data, overseeing the use of data as a resource across government to help deliver better services to New Zealanders (e.g., through setting data standards and establishing common capabilities, developing data policy and strategy, and planning).

**Government Chief Digital Officer (GCDO)** – the government system lead for digital, overseeing the development and management of digital for the state sector.

**Government Chief Information Security Officer (GCISO)** – the government system lead for information security, overseeing the development of the strategic direction and prioritisation of the Government approach to information security in alignment with other system leads.

**Government data system** – includes the people and organisations that collect and use data; data holdings (survey, administrative, etc) of public sector agencies and associated architecture and infrastructure; supporting components such as data access and common practices; and enablers such as protection mechanisms to ensure that data within the system is used in a safe way (Reference: Data Strategy and Roadmap).

**He Ara Waiora** – a framework that provides a Māori perspective on wellbeing. He Ara Waiora gives an indigenous and uniquely Aotearoa New Zealand view by taking a tikanga-based approach to wellbeing. It is used in conjunction with the Treasury Living Standards Framework.



**Investment opportunity** – a gap in one or more Essential Data Assets that have been prioritised for development or remedial work in the Plan.

**Iwi-Māori Data** – iwi and Māori are and have been data designers, collectors, and disseminators for countless generations. For some Māori, Māori data is a tāonga.

Māori data is data that is for, from or, about Māori and the places they have connections with. It is data about or from iwi in terms of people, language, culture, resources, environments<sup>5</sup>.

Cutting across this is the idea of both individual and collective wellbeing – that iwi are interested in how people fare individually as well as the collectives that they comprise. How each iwi defines the components of wellbeing, and their relative priority, shifts from iwi to iwi.

**Measurement framework** – a set of standard concepts, definitions, and classifications for compiling measures within a particular domain or topic area.

**Metadata** – the information that defines and describes data.

**Pillar** – in the Data Investment Plan taxonomy Essential Data Assets are organised into three groups called pillars:

- Economy
- Society
- Environment.

**Population** – the total membership or universe of a defined class of units which are the focus of interest. A population could consist of all the persons in a country, or those in a particular geographical location, or a specific ethnic group, depending on the purpose of the study. A population could also consist of non-human units such as farms, houses, business establishments or sheep.

**Register** – a list of units in a population. A statistical register is a register that is constructed and maintained for statistical purposes, according to statistical concepts and definitions, and under the control of statisticians. Administrative registers, such as birth and death registrations and a tax client register, can be used as sources for statistical registers.

**Satellite Account** – Satellite accounts are an extension of the core national accounts which produce the Gross Domestic Product (GDP) statistics. A satellite account involves rearranging existing information in the national accounts so that an area of economic or social importance can be analysed more closely. As extensions of the core system of national accounts, satellite accounts are an important recommendation of the international standard, the System of National Accounts 2008 (Inter-Secretariat Working Group on National Accounts, 2008).

**SWA** – Social Wellbeing Agency

**Taxonomy** – a schema for naming, organising, and presenting Essential Data Assets.

**Tier 1 statistics** – a list of the most important statistics needed to understand how well Aotearoa New Zealand is performing and used to inform critical decision making. The list of Tier 1 statistics was approved by Cabinet in 2012.

**Treasury Living Standards Framework** – The Treasury’s perspective on what matters for Aotearoa New Zealanders’ wellbeing, now and into the future. It is a flexible framework that prompts thinking about policy impacts across the different dimensions of wellbeing, as well as the long-term and distributional issues and implications. It includes three levels:

- individual and collective wellbeing
- institutions and governance
- the Wealth of Aotearoa New Zealand.

<sup>5</sup> This definition is derived from one on page 6 of *Iwi Data Needs* published in 2021 by Te Kahui Raraunga

## Appendix Two – Process to identify and prioritise investment opportunities

The Data Investment Plan was developed in a three-step process with consultation occurring at each step. The steps were as follows:

- perform a stocktake – forming a single cross-government view of all existing data products alongside an assessment of their current state. Identifying domain and subject areas where there are gaps or quality issues
- prioritisation – setting of assessment criteria and processes to prioritise where activity and investment are most needed across essential data assets
- pipeline – developing an indicative roadmap for change.

### How were the data assets identified?

From March 2020 to June 2021 a cross-agency working group<sup>6</sup> completed a stocktake of the data system's Essential Data Assets (EDAs) and identified key data gaps. This work was informed by adopting a system-wide view of what New Zealand's enduring information needs are.

Enduring information needs are reflected in government strategies and those of independent agents advising government, such as the Parliamentary Commissioner for the Environment.

The stocktake of data assets was informed by a body of knowledge that has grown from previous engagements with iwi-Māori, including the Whānau Ora Outcomes Framework and Measuring Māori Wellbeing draft set of indicators created by Te Puni Kōkiri.

### How were the data assets classified?

The data system is complex, with multiple externalities that affect both system assets and the use of these assets. While designing the stocktake, the Working Group first created a taxonomy (classification system) to make the stocktake more accessible to non-data scientists.

The taxonomy comprises three high-level pillars:

- Economy
- Environment
- Society.

The three pillars are subdivided into domains and beneath these 80 categories organise the Essential Data Assets related to that category (as well as identifying the data gaps).

The system was informed by the Treasury's Living Standards Framework, the Tier 1 statistics, and international approaches.

There are also three cross-cutting dimensions – iwi-Māori data needs and aspirations, populations of policy interest, and data integration assets – which cut across the pillars.

### How was performance assessed?

The working group assessed categories of data products as being generally fit for purpose, in need of some development, or in need of major development (e.g., where there may be no current methodology known to fill the data gap).

### Who reviewed the findings?

The Information Group provided advice and leadership from a system-wide perspective. The Information Group provides strategic leadership across the Public Service in support of the Government Chief Data Steward (GCDS). It is chaired by the Deputy Statistician and Deputy Chief Executive Data System Leadership. Various government agencies reviewed the changes made for the second iteration of the Plan.

### What was the prioritisation framework?

Having agreed on the stocktake and data gaps, in July 2021 the Working Group developed assessment criteria (based on approved design principles) by which the data gaps were prioritised for investment.

The framework was supported by the Data Iwi Leaders Group as a good way of prioritising government investment in data collected by the government. The assessment criteria and weightings (overleaf) were approved by the Information Group.

### How was prioritisation done?

In July-August 2021, a sub-group of the Working Group assessed the 90 opportunities and scored each opportunity against the assessment criteria.

This assessment was sequentially reviewed by the wider Working Group, the Data Iwi Leaders Group, and the Information Group.

### How was the pipeline prepared?

In August 2021, a sub-group of the Working Group assessed the 30 highest ranked opportunities, considered the complexity of investment, any dependencies, and what was already underway to prepare the pipeline.

This assessment was sequentially reviewed by the Data Iwi Leaders Group, and the Information Group.

<sup>6</sup> Working Group agency membership is detailed in Appendix Seven.

The pipeline was reviewed and refreshed during 2022, following engagement with the Working Group, Data Iwi Leaders Group, and selected iwi and iwi-Māori organisations.

## Evaluation – a binary assessment against weighted criteria

### A. Government priorities (9%)

- 9% Would filling the gap contribute significantly to any of the Government priorities listed below?
  - Climate change response
  - Reduce social inequalities and child poverty
  - Improve housing affordability and reduce homelessness
  - Accelerate COVID-19 recovery.

### B. Attractiveness (73%)

- 14% Would filling the gap contribute significantly to addressing one or more enduring information needs:
  - Contributes to one, OR
  - Contributes to two or more.
- 18% Would filling the gap contribute significantly to any elements of the integration goal of the NZ Data Strategy listed below?
  - Consolidate foundational data that underpins integration (e.g., registers, classifications, and standards)
  - Improve interoperability across the system (e.g., data is designed to be shared, integrated, and re-used)
  - Net decrease of data provider burden across the system.
- 14% Would filling the gap contribute significantly to any elements of the inclusivity goal of the NZ Data Strategy listed below?
  - Make data about iwi-Māori more visible, OR
  - Make another population of policy interest groups more visible, OR
  - Address an iwi-Māori high priority data need, OR
  - Address a high priority data need relevant to another population of policy interest groups, OR
  - Support improved measurement of diversity or equity (e.g., small populations and geographical communities).

- 9% Would filling the gap contribute significantly to iwi-Māori data needs and aspirations?
  - Essential iwi-Māori data infrastructure, OR
  - Reducing iwi-Māori data dependency on the Crown, OR
  - Empowering data-driven decision-making in te ao Māori, OR
  - Ability for iwi-Māori to design or co-design data.
- 9% Does failure to invest create an unacceptable risk to the quality of the EDA for any of the following reasons?
  - Ongoing funding of the EDA has or will cease, OR
  - Current funding is not sufficient to maintain the fitness of the EDA for its prime purpose(s).
- 9% Will addressing the gap deliver value by enabling any of the following:
  - Evaluation research examining causal impacts to identify what works, for whom, and in what circumstances, OR
  - Evidence and feedback that enables service providers to make more robust decisions in the context of their clients' lives, OR
  - Supports cross-domain analysis or thought leadership analysis.

### C. Achievability (18%)

- 9% Is there a high probability that a proposal to fill the gap could be delivered within the next two years?
- 9% Has the agency initiated any work to fill the gap? (e.g., a proposal or business case has been or is being prepared).

## Appendix Three – Investment Opportunity profiles

In this appendix, we describe the top 33 investment opportunities, by pillar/dimension.

The titles of the next 60 opportunities are also listed.

### Iwi-Māori data needs and aspirations dimension

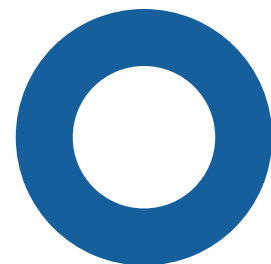
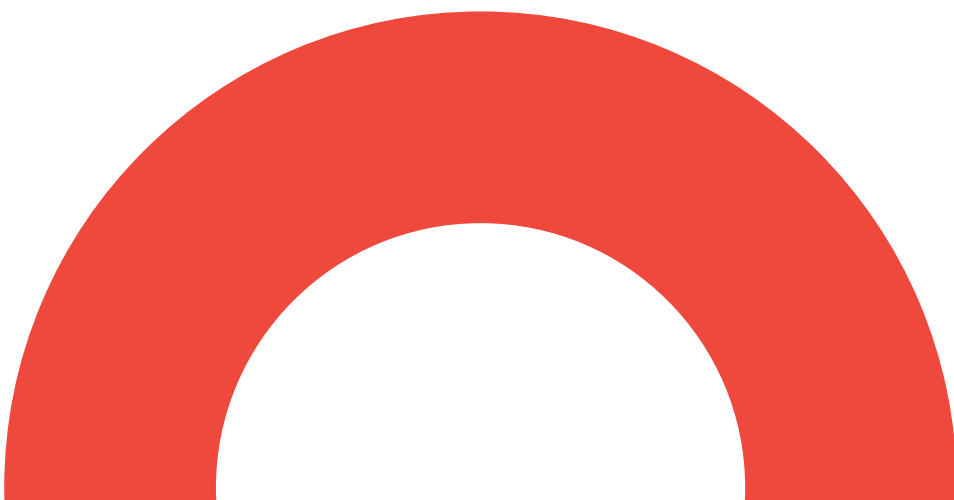
#### New te ao Māori measures of wellbeing

<p><b>Description</b></p>	<p>This opportunity will enable Māori wellbeing to be measured in a way that is meaningful to Māori. It will embody a strength-based approach that will enhance community-led improvement to wellbeing. For example, understanding the way that cultural engagement can lift wellbeing will contribute to better spiritual, economic and educational outcomes.</p> <p>The <i>He Ara Waiora</i> framework will be used as the conceptual basis for the indicators. <i>He Ara Waiora</i>, derived from mātauranga Māori, is a complementary framework that sits alongside The Treasury's <i>Living Standard Framework</i>. Collectively the two frameworks contribute to the Government's wellbeing approach – to ensure that future investment decisions are driven by both Māori and New Zealanders' overall wellbeing.</p> <p><b>Specific initiatives</b></p> <p>Ngā Tohu Waiora – a project led jointly by Te Puni Kōkiri and The Treasury aims to develop a suite of measures and indicators of Māori wellbeing from a te ao Māori perspective, focusing on the three domains of <i>He Ara Waiora</i>:</p> <ul style="list-style-type: none"> <li>• Wairua/Spirituality</li> <li>• Te Taiao/Natural world</li> <li>• Te Ira Tangata/Human domain.</li> </ul> <p>Key tasks have included:</p> <ul style="list-style-type: none"> <li>• identifying what matters most in measuring Māori wellbeing</li> <li>• assessing the utility of existing universal and Māori-specific strategies, frameworks, action plans, measures, and indicators that could help in telling the <i>He Ara Waiora</i> story</li> <li>• identifying concepts and value of importance to Māori that require measurement (e.g., whānau or whānau wellbeing).</li> </ul> <p>Further work is needed to identify data or statistical gaps that will require further development.</p> <p>Iwi-Māori engagement showed strong support for this investment opportunity. It is seen as capturing and making visible work done at the hapū/marae level, especially around education and health. It will allow providing acknowledgement and validation of wairua, tinana and hinengaro and whānau outcomes.</p> <p>There was widespread support for developing a <i>new conceptual and measurement framework for wairua/spiritual health</i>. This investment opportunity could be a first step in addressing this iwi/Māori data need.</p>
<p><b>Opportunity</b></p>	<p>If Māori wellbeing can be measured, then iwi-Māori will be better positioned to achieve Māori data needs and aspirations.</p>

## Iwi-Māori data needs and aspirations dimension

### New te ao Māori measures of wellbeing (continued)

<b>Current state</b>	<p>There is limited data available on Māori wellbeing that reflects te ao Māori perspectives. Existing data is predominantly obtained from the Census and Te Kupenga, the Māori wellbeing survey.</p> <p>More frequent data supported by the improved infrastructure which shows Māori perspectives, priorities, language, access to services, and control is needed, at both a national and local level.</p>
<b>Status and interdependencies</b>	<p>Work is underway on the Ngā Tohu Waiora project. This project draws on the <i>He Ara Waiora</i> framework and has the development of a suite of measures and indicators of Māori wellbeing from a te ao Māori perspective as a key deliverable.</p> <p>Māori wellbeing as an investment opportunity is directly linked to the following “Māori specific” opportunities:</p> <ul style="list-style-type: none"> <li>• Māori data governance</li> <li>• Māori data infrastructure</li> <li>• Māori data capacity &amp; capability.</li> </ul> <p>Māori wellbeing is also an important component of many of the other investment opportunities. In particular, improved data on the wellbeing of children and young people.</p>
<b>Responsible agencies</b>	<p>Te Puni Kōkiri. The Treasury.</p>
<b>Contributing agencies</b>	<p>Te Arawhiti.</p>



## Iwi-Māori data needs and aspirations dimension

### Māori data governance

<b>Description</b>	<p>Over the next ten years, designing, establishing and investing in infrastructure for Māori data governance is needed. This infrastructure may include the establishment of an Indigenous Data Steward function with support structures. This could include other data system support in the form of regional/localised champions and hubs for data or data storage/ repositories.</p> <p>This investment opportunity was recommended by the Data Iwi Leaders Group as part of the iwi/Māori engagement. The need for Māori data governance was a strong and consistent theme throughout the iwi/Māori engagement.</p>
<b>Opportunity</b>	<p>The Data Investment Plan provides the opportunity to create fundamental shifts in the data system in ways that will not only benefit iwi and Māori, but also the whole nation as well.</p> <p>Designing, establishing, and investing in infrastructure for Māori data governance is vital to the Data Iwi Leaders Group's vision of the future of the data system that:</p> <ul style="list-style-type: none"> <li>• invests in iwi-Māori as part of the Te Tiriti relationship</li> <li>• positions government to enable iwi-Māori capabilities and futures</li> <li>• embodies the relational space between Māori collectives and government, so that data serves iwi-Māori peoples and communities directly (as opposed to government on behalf of communities)</li> <li>• provides better system performance for iwi-Māori through Māori data governance, Māori and iwi-led data design for their own purposes, supporting infrastructures and increased data capabilities.</li> </ul>
<b>Current state</b>	<p>Data has the potential to make a significant difference in outcomes for iwi, hapū and whānau. To make this difference, data needs to be relevant to iwi-Māori, to reflect te ao Māori views, and be collected by and with iwi-Māori in line with Te Tiriti expectations.</p> <p>There is a significant opportunity to build the capacity and capability within communities for the collection, management, and governance of Māori data by iwi-Māori.</p>
<b>Status and interdependencies</b>	<p>Proposed investment opportunities on <i>Māori data infrastructure</i> and <i>Māori data capability</i> are interdependent with this investment. It also could contribute to the investment opportunity <i>Standardised system-wide data governance</i>.</p>
<b>Responsible agencies</b>	<p>Stats NZ.</p>
<b>Contributing partners</b>	<p>Partnerships with iwi and hapū.</p>



## Iwi-Māori data needs and aspirations dimension

### Māori data capability

<p><b>Description</b></p>	<p>This investment opportunity aims to enhance the capability of communities, iwi and hapū to realise the benefits of data and action the insights from data. To reach this point, there must be significant investment in capabilities so that iwi, Māori, and communities have the ability to design and collect data of meaning to them, access and analyse data that is collected by government and non-government sources, and make sense of what this means for their aspirations. This includes investment in capabilities and data relationships, and the removal of barriers, so that data futures exist for iwi and Māori.</p> <p><b>Specific initiatives</b></p> <p>Stats NZ's existing work programme supports the growth of Māori data capacity by building capability through mahi tahi in data initiatives defined by iwi. This investment opportunity has been proposed by the Data Iwi Leaders Group. The need to support data capability was also a strong theme from the wider iwi-Māori engagement.</p>
<p><b>Opportunity</b></p>	<p>The investment that builds on the existing iwi-Māori capability to design, collect, analyse, and interpret data will enable greater insights for iwi-Māori to deliver benefits for their people, which benefits all Aotearoa New Zealand.</p>
<p><b>Current state</b></p>	<p>There needs to be significant investment in people's capability and capacity. There must be appropriate data literacy in the communities Stats NZ serves, including iwi-Māori.</p> <p>As datasets are provided to Māori, there must be an investment in their capability to understand, analyse, interpret, and find meaning in the data. Moreover, in a distributed systems model, there should also be an investment in capabilities to design and collect data.</p> <p>There is a need for all government agencies who collect and use iwi-Māori data have responsibility to grow Māori data capability within the relationships they engage in.</p>
<p><b>Status and interdependencies</b></p>	<p>Stats NZ's Māori Data Capability work programme is underway. This involves working on iwi-defined data projects in the spirit of <i>mahi tahi</i> data capability by both parties.</p> <p>Proposed investment opportunities on <i>Māori data infrastructure</i> and <i>Māori data governance</i> are interdependent with this investment.</p>
<p><b>Responsible agencies</b></p>	<p>Stats NZ.</p>
<p><b>Contributing partners</b></p>	<p>Partnerships with iwi and hapū.</p>

## Iwi-Māori data needs and aspirations dimension

### Māori data infrastructure

<b>Description</b>	<p>Within the context of Te Tiriti and Mana Ōrite, it is important for the government to invest in iwi and Māori infrastructure. There must be a space where iwi and Māori data exists outside of the government narratives but is supported within the Te Tiriti relationship.</p> <p>At one end of the spectrum, this could exist with iwi (or hapū), with government funding building and supporting this infrastructure. Alternatively, an infomediary, such as Te Whata, could be supported and funded through ongoing investment. Te Whata provides a flexible tool for data to be designed, used and analysed by iwi, rather than duplicating infrastructures across multiple iwi.</p> <p>This investment opportunity has been proposed by the Data Iwi Leaders Group. The Data Iwi Leaders Group stated, "...this is a more immediate priority area of investment." The need to access government data and link iwi-Māori data holdings was also a strong theme from the wider iwi-Māori engagement.</p>
<b>Opportunity</b>	<p>There is value in investing in Te Whata, as an infomediary that connects government-collected iwi and Māori data, with iwi-Māori datasets.</p> <p>Investment to build and/or enhance can include:</p> <ul style="list-style-type: none"> <li>• building the infomediary function of Te Whata to funnel or channel government datasets to iwi and Māori</li> <li>• building the data linking functionality of Te Whata to create new data from government and iwi-Māori datasets</li> <li>• using data-linking functionality to provide more robust iwi population measures because iwi affiliation is based on identifiers generated by iwi (based on Māori concepts, such as whakapapa). This addresses the significant challenge of defining reliable, valid, and consistent iwi population parameters</li> <li>• investing directly in iwi and hapū to build their respective infrastructure.</li> </ul>
<b>Current state</b>	<p>The launch of Te Whata has been seen as a positive first step in meeting the goals of this investment. Te Whata is a data platform tailored specifically by iwi for iwi – by Māori for Māori. Te Whata is for iwi members, technicians, and leaders – <i>designers</i> and <i>users</i> of data.</p>
<b>Status and interdependencies</b>	<p>Proposed investment opportunities on <i>Māori data governance</i> and <i>Māori data capability</i> are all interdependent with this investment.</p>
<b>Responsible agencies</b>	<p>Stats NZ.</p>
<b>Contributing partners and agencies</b>	<p>Partnerships with iwi and hapū. Government agencies holding data.</p>

## Iwi-Māori data needs and aspirations dimension

### Further iwi-Māori investment opportunities

The following investment opportunity has been added to the *iwi-Māori needs and aspirations* dimension:

- New conceptual and measurement framework for wairua/spiritual health.

Several existing priorities under other pillars and dimensions have been identified as supporting iwi-Māori needs and aspirations areas:

- more accurate population estimates
- consistent business rules to support data sharing and interoperability
- data registers and supporting infrastructure to enable data integration and reuse
- data governance to ensure system assets are managed appropriately, readily accessible, and protected
- IDI – improved range and ingestion of incoming data sets
- consistent measurement of ethnic identity, including Māori descent and iwi affiliation.



## Economy pillar

### Granular housing affordability and homelessness measurement

<p><b>Description</b></p>	<p>This investment opportunity contributes to improving housing and health outcomes for New Zealanders. Policies aimed at addressing homelessness and improving housing affordability need better information at the community level and about the population groups that are most affected. This will enable more effectively targeted policies to be designed and their outcomes to be assessed more rapidly (e.g., providing insights into the effects of short-term temporary housing on households gaining secure and affordable accommodation).</p> <p><b>Specific initiatives</b></p> <p>Housing affordability measurement</p> <ul style="list-style-type: none"> <li>• Maintaining and expanding the existing Household Economic Survey (HES), General Social Survey (GSS), and Census-based housing affordability to make better use of what is already collected. This includes expanding to population groups so that data on who is affected is more accessible</li> <li>• Publish Change in Housing Affordability Indicators (CHAI) and further develop granular affordability indicators</li> <li>• Decide on an official house price index short-term, develop an official index (long-term)</li> </ul> <p>Homelessness measurement</p> <ul style="list-style-type: none"> <li>• Severe Housing Deprivation (SHD) estimates for census years, with additional granularity</li> <li>• An ongoing product that provides information on the state of homelessness</li> <li>• An enduring official statistic that provides a numerical measure of homelessness</li> <li>• Housing and support services provider data into IDI.</li> </ul> <p>Iwi-Māori engagement identified a theme of economic hardship. Assisting vulnerable whānau and homelessness were cited as examples of economic hardship.</p>
<p><b>Current state</b></p>	<p>Data on homelessness has been produced using a combination of census and administrative data, but further work is required to develop robust and more frequent measures. In particular, data is needed for population groups of interest, which requires additional integrations to measure at the appropriate level of aggregation.</p> <p>While more frequent measures of housing affordability have been developed, further work is required to improve components of these measures and disaggregate for populations of interest.</p>
<p><b>Opportunity</b></p>	<p>Existing data collections have under-utilised information on housing affordability and homelessness. These collections can be better used to make additional breakdowns available.</p> <p>A further investment in the IDI, will allow for the production of more timely measures of housing affordability and homelessness on a more granular basis and with a focus on populations of interest.</p>
<p><b>Status</b></p>	<p>The potential for obtaining deeper insights into housing affordability and homelessness from existing data is being investigated.</p>

## Economy pillar

### Granular housing affordability and homelessness measurement (continued)

<b>Key interdependencies</b>	<p>The initiatives to improve data on housing affordability and homelessness are dependent on the ongoing collection and robustness of household surveys, particularly HES and GSS, and Census.</p> <p>Improvements to the IDI would help to give improved granularity, particularly at lower geographic levels, but would only be effective if accurate households can be formed and if dwelling status (rented/owned) is available.</p> <p>More granular housing affordability and homelessness measurement is dependent on the following investment opportunities:</p> <ul style="list-style-type: none"> <li>• <i>Strengthened Integrated Data Service</i></li> <li>• <i>Additional registers and foundational data.</i></li> </ul>
<b>Responsible agencies</b>	Ministry of Housing and Urban Development.
<b>Contributing agencies</b>	Ministry of Social Development. Stats NZ. Ministry of Business, Innovation & Employment.



## Economy pillar

### Improved insights on child poverty and energy hardship

<b>Description</b>	<p>This investment opportunity contributes to <i>Improving children's wellbeing and reducing inequality</i>. It builds on the work already in place and will improve the knowledge we have by developing a view of poverty as it affects children over time. This will provide a view of the numbers and characteristics of children who are in a continuous state of poverty as opposed to those for whom it is a transitional state. This knowledge will allow the targeting of interventions to deal with systemic (long-term) issues as well as short term aid to address shorter term impacts (such as those arising from a pandemic such as COVID-19).</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Improved insights on child poverty</li> <li>• Improved insights on energy hardship.</li> </ul>
<b>Current state</b>	<p>Understanding and monitoring the numbers and characteristics of households experiencing material hardship and/or poverty is essential for monitoring the Child Poverty Reduction Act 2018 as well as evaluating the effectiveness of interventions.</p> <p>Considerable investment has already been made in data to measure child poverty at the national level and for subgroups, such as Māori and Pacific children, and children impacted by disability.</p> <p>Further investment into improved insights will ensure the data continues to meet the purposes of the Child Poverty Reduction Act 2018, with the goal of a significant and sustained reduction of child poverty in Aotearoa New Zealand.</p>
<b>Opportunity</b>	<p>There are further development opportunities to improve understanding of child poverty. Identified areas of further development include the introduction of new measures of poverty (e.g., te ao Māori measures of poverty) and the improvement of measurement instruments (e.g., the inclusion of children who are homeless).</p> <p>Additional data can provide ancillary benefits; for example, by better measuring energy hardship, the Ministry of Business Innovation and Employment can better set policy and regulate the energy sector.</p>
<b>Status</b>	<p>Stats NZ's Living in Aotearoa Survey began data collection in 2021/22 and the first results of persistent child poverty will become available from 2024.</p> <p>MBIE continues to lead work to deliver <i>Improved insights on energy hardship</i>.</p>
<b>Key interdependencies</b>	<p>The following investment opportunities are interdependencies for this investment:</p> <ul style="list-style-type: none"> <li>• <i>strengthened Integrated Data</i></li> <li>• <i>more accurate and frequent measures of the population</i></li> <li>• <i>consistent measurement of ethnicity across government.</i></li> </ul>
<b>Responsible agencies</b>	<p>Stats NZ. Ministry of Business, Innovation and Employment.</p>
<b>Contributing agencies</b>	<p>Te Puni Kōkiri. Ministry of Social Development. Department of the Prime Minister and Cabinet (Child Poverty Unit).</p>

## Economy pillar

### New data to measure the value of the digital economy

<b>Description</b>	<p>This opportunity will contribute to <i>Building the economy</i> by providing a clear definition of what is meant by the digital economy and the data required to measure its value/worth – how it contributes to economic performance. For example, it will show how firms are already using digital infrastructure and barriers to their growth.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Defining the scope of the digital economy e.g., a register of digital businesses</li> <li>• Producing measures of the size and value of the digital economy, e.g., a range of digital economy statistics (mainly through linking existing datasets); data on international trade in digital products.</li> </ul>
<b>Current state</b>	<p>Assessing the size and value of Aotearoa New Zealand’s digital economy is a complex process that requires an agreed definition of the digital economy and effective measurements.</p> <p>Available measures are not comprehensive or robust enough to fully understand the impact of digital change within the economy.</p>
<b>Opportunity</b>	<p>If the size and value of Aotearoa New Zealand’s digital economy is understood, it will enable agencies to support areas of growth and gain better insight into the economy. The importance of this sector has been shown during the COVID-19 pandemic.</p>
<b>Status</b>	<p>Underway.</p>
<b>Key interdependencies</b>	<p>This investment opportunity will intersect with expected future investment in updating core macroeconomic statistics like GDP (Gross Domestic Product) to incorporate revised international statistical standards. This will include modernising Aotearoa NZ’s classification of industries, our Balance of Payments, and National Accounts frameworks.</p> <p>This work will include aspects relevant to the digital economy, so earlier funding for digital economy may help offset some future costs.</p> <p>Strengthened integrated data, additional registers, and foundational data are interdependencies for this investment opportunity.</p>
<b>Responsible agencies</b>	<p>Stats NZ. Ministry of Business, Innovation and Employment.</p>
<b>Contributing agencies</b>	<p>Department of Internal Affairs.</p>

## Economy pillar

### Improved and additional satellite accounts

<p><b>Description</b></p>	<p>This investment opportunity contributes to <i>Building the economy</i> by providing visibility and detailed insights into activities that are spread through the standard measurement of the economy (e.g., tourism, health). A satellite account is a method to show the impact of activities that cut across standard outputs.</p> <p>Satellite accounts are an extension of the core national accounts which produce the Gross Domestic Product (GDP) statistics. A satellite account involves rearranging existing information in the national accounts so that an area of economic or social importance can be analysed more closely. As extensions of the core system of national accounts, satellite accounts are an important recommendation of the international standard, the System of National Accounts 2008 (Inter-Secretariat Working Group on National Accounts, 2008).</p> <p>An example of an initiative in this opportunity is improving the existing tourism satellite account to provide information on the contribution of tourism (which occurs in several industries) broken down by region and sub-regions.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Addition of a regional dimension to Aotearoa NZ's Tourism Satellite Account</li> <li>• Additional Satellite accounts for labour</li> <li>• Additional satellite accounts for health.</li> </ul> <p><b>Investment Drivers</b></p> <ul style="list-style-type: none"> <li>• Additional Satellite accounts for labour</li> <li>• Improved understanding of the labour market for informing economic and social policy. Improved quality of productivity measurement and allowing for greater coverage and granularity</li> <li>• Alignment with Data Strategy and Roadmap</li> <li>• Satellite Accounts often bring together data from different sources and integrate them. They align with the goals of data integration and inclusivity.</li> </ul>
<p><b>Current state</b></p>	<p>There is limited availability of data showing the contribution of the tourism, labour and health sectors to the economy, including by region. This is important for agencies to understand the performance of industries and where the most value is gained (e.g., we are currently unable to determine the value of Chinese tourist spending by region).</p> <p>Regionalised tourism data has been highlighted as a gap by government agencies and regional tourism bodies. The extension of the Tourism Satellite Account to include regionalised tourism data would improve the ability to support regional tourism strategies and understand the relative contributions of tourism at the regional level.</p> <p>There is limited availability of data showing the contribution of the labour and health sectors to the economy by region. If satellite accounts can be measured accurately, then agencies can understand where value is being produced and where future opportunities lie.</p>
<p><b>Opportunity</b></p>	<p>If satellite accounts can be measured accurately, agencies will be able to understand where value is being produced and where future opportunities lie.</p> <p>The initiative to develop a labour satellite account is scheduled for years 4-7. It will enhance agencies' ability to understand where value is being produced and where future opportunities lie by regions and industries.</p> <p>The initiatives to develop an enhanced regional tourism satellite account and a health satellite account are scheduled for years 8-10 of the Plan.</p>



## Economy pillar

### Improved and additional satellite accounts (continued)

<b>Status</b>	<p>There is currently work underway to develop the tourism satellite account.</p> <p>Work is underway in Stats NZ to improve the coherence of labour market statistics and reconcile inconsistency in coverage of existing measures of the labour market (e.g., providing context for differing movements or trends between surveys, additional labour market statistics, providing context on differences/similarities to existing measures when introducing new sources of labour market data, production of meta data such as user guides and release of experimental ‘comparable’ series). The development of the labour satellite account will build on this work.</p> <p>A Labour Accounts series is the preferred option to continue pre-existing work in integrating labour market statistics.</p> <p><b>Timing of investment</b></p> <ul style="list-style-type: none"> <li>• Additional Satellite accounts for labour in years 4-7</li> <li>• Addition of a regional dimension to NZ’s Tourism Satellite Account in years 8-10</li> <li>• Additional satellite accounts for health in years 8-10.</li> </ul>
<b>Key interdependencies</b>	Further scoping is required for the development of regional tourism satellite accounts. As a first step, developing regionalised input/output tables will be necessary as the account relies on an understanding of industry, product, and service dimensions. This would be a significant investment.
<b>Responsible agencies</b>	Stats NZ.
<b>Contributing agencies</b>	Ministry of Business Innovation and Employment. Ministry of Health.

### Additional data on wellbeing of business owners

<b>Description</b>	There is a desire for businesses to grow while providing a living for business owners and their families. Understanding and improving business owners’ wellbeing will allow negative impacts (e.g., the level of stress) to be addressed and positive impacts (e.g., time for family activities, supporting their staff) to be enhanced. This will allow the business system to support the wellbeing of business owners and their staff. This should encourage more businesses to improve productivity, innovate, or export to grow.
<b>Current state</b>	A longitudinal business database is used to obtain data. A finer level of data granularity is required to understand the wellbeing and demographics of business owners. More work needs to be done to gather data on small and self-employed businesses.
<b>Opportunity</b>	If the wellbeing and demographics of business owners are understood, agencies will be able to understand the sustainability of New Zealand businesses in various economic climates.
<b>Status</b>	Stats NZ uses a longitudinal database to obtain current data. MBIE has initiated a survey targeted at business owners and the impacts of COVID-19. However, these surveys have not been consolidated.
<b>Key interdependencies</b>	This investment opportunity has links to the <i>Additional registers and foundational data</i> opportunity.
<b>Responsible agencies</b>	Ministry of Business, Innovation and Employment.
<b>Contributing agencies</b>	Stats NZ.

## Economy pillar

### Improved measurement of Māori businesses

<b>Description</b>	<p>This investment opportunity contributes to <i>Building the economy</i>. It will result in better statistics on Māori businesses using a consistent, agreed definition based on a te ao Māori view. These statistics will highlight the contribution of Māori businesses to the New Zealand economy and allow investment/intervention to increase their growth for greater economic benefits to Māori and Aotearoa New Zealand.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Develop an agreed definition of a Māori Business for use across Aotearoa New Zealand's data system</li> <li>• Update New Zealand Business Number (NZBN) to enable Māori Businesses to identify</li> <li>• Implement the definition of Māori business in the statistical business register</li> <li>• Communication strategy to promote Māori businesses to identify on the NZBN</li> <li>• Production of data outputs using this standard definition</li> <li>• Coherent and new insights about Māori businesses</li> </ul> <p>Iwi-Māori engagement noted this as one of a set of investment opportunities of interest from a holistic view.</p>
<b>Current state</b>	<p>There is under-coverage of Māori businesses in existing data. Some Māori businesses are registered on IR databases for tax purposes, but these do not provide full coverage.</p> <p>Further development of definitions related to Māori business need to be established to understand these businesses. The approach used for Māori businesses has the potential to support the identification of these groups of businesses.</p>
<b>Opportunity</b>	<p>If all Māori businesses can be identified and good data collected, then agencies will be able to monitor the health of these businesses and benchmark them across their respective industries.</p> <p>The approach used to measure Māori businesses may assist in measuring other types of businesses, such as Pacific, tourism, and foreign-held businesses.</p>
<b>Status</b>	<p>Work to define Māori business has been undertaken:</p> <ul style="list-style-type: none"> <li>• standard definition has been finalised in July 2022 for use across government</li> <li>• implementation of standard definition in NZBN by December 2022</li> <li>• review use of standard definition by other agency systems</li> <li>• measurable increase in identification of Māori businesses by December 2023.</li> </ul> <p>Sourcing of lists from Māori business networks and organisations – already commenced by Stats NZ and ongoing. Lists are used to update the Statistical Business Register to enable the production of Māori business statistics with broader coverage than those identified in the tax system.</p> <p>Work to implement the standard definition across the data system is expected to be completed in the next 1-3 years. While the definition will be implemented in the NZBN by the end of 2022, it is expected it will take at least an additional 12-18 months until there is sufficient response to the Māori business identification questions to provide a measurable impact on Māori business statistics.</p> <p>Work to source Māori business organisation and network lists to supplement the Statistical Business Register has commenced and is ongoing.</p>
<b>Key interdependencies</b>	
<b>Responsible agencies</b>	<p>Stats NZ. Ministry of Business, Innovation and Employment. Te Puni Kōkiri.</p>
<b>Contributing agencies</b>	<p>Inland Revenue.</p>

## Economy pillar

### Improved visibility of pay gaps

<b>Description</b>	<p>This investment opportunity contributes to <i>Improving children's wellbeing and reducing inequality</i> by identifying pay-gaps in population sub-groups (e.g., ethnic groups, disabled people) to target interventions to improve the socio-economic outcomes of populations of policy interest. An example of this would be removing barriers to economic participation to enable disabled people to contribute to their full potential and receive equitable and appropriate remuneration.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Review of Australian and NZ Standard Classification of Occupations (ANZSCO)</li> <li>• Improved analysis of pay gaps for populations of policy interest.</li> </ul>
<b>Current state</b>	<p>There are issues with the quality and frequency of detailed occupational data.</p> <p>Data is collected every five years via the Population Census leading to large gaps in the intervening years. Detailed earnings data is not readily available, and it is difficult to undertake pay-gap analysis on population sub-groups (e.g., ethnic groups, disabled people) due to a lack of agreed standards.</p> <p>The classification of occupations used in New Zealand needs to be reviewed and updated to better reflect New Zealand's current work culture.</p>
<b>Opportunity</b>	<p>If granular occupation and earnings data is collected, then agencies will be able to analyse pay gaps within sub-national populations. This could then be used to improve working conditions for sub-national populations and improve their socio-economic outcomes.</p>
<b>Status</b>	<p>The first step to improving visibility of pay gaps is to have a classification that is up to date and relevant to Māori. This work is underway and is scheduled to be completed by 2023. This will review what is relevant to New Zealand today, remove any errors, and reflect te ao Māori perspectives and occupations relevant to Māori. The resulting classification will also be available in te reo Māori.</p> <p>Work on analysis of Pay gaps for populations of policy interest is planned for years 4-7.</p>
<b>Key interdependencies</b>	
<b>Responsible agencies</b>	<p>Review of classification of occupations for New Zealand use:</p> <ul style="list-style-type: none"> <li>• Stats NZ.</li> </ul> <p>Improved analysis of pay gaps for populations of policy interest:</p> <ul style="list-style-type: none"> <li>• Ministry of Business, Innovation &amp; Employment.</li> </ul>
<b>Contributing agencies</b>	<p>Public Service Commission.          Ministry of Social Development.          Tertiary Education Commission.          Ministry of Primary Industries.          Ministry for Women.          Te Puni Kokiri.          Whaikaha Ministry of Disabled People.          Ministry for Ethnic Communities.          Infometrics.          New Zealand Institute of Economic Research.</p>

## Economy pillar

### Further opportunities

New integrations to provide insights on firm-level productivity.	New measures on the economic impact of visitors.
Additional data collected about traffic.	Data on quality and resilience of physical infrastructure (including transport, telecommunications etc) made more available.
Improved data is needed on housing instability.	Business Operations Survey expanded to public sector organisations.
Enhanced calculation of regional GDP.	Enhanced debt market statistics.
Better price commodity balancing to achieve a more coherent set of GDP data.	Enhanced financial sector balance sheet.
Additional data collected about the accommodation sector.	New measures on foreign-held businesses.
Pacific Peoples businesses term to be clearly defined.	Enhanced data on demand for, use of, trust in, and outcomes of digital services.
Improved data on access to services and infrastructure.	More systematic measurement of the nature and terms of work.
Improved data on household debt.	Intergenerational transfer accounts developed.
Maintenance of existing economic data.	Cessation of business and change of ownership need to be more clearly delineated.
Enhanced quarterly national accounts.	

## Environment Pillar

### Nationally consistent measurement of land use

<p><b>Description</b></p>	<p>This investment opportunity will contribute to the Government outcomes around <i>Protecting our environment for the future</i> by:</p> <ul style="list-style-type: none"> <li>• giving a picture of land management and use activities where the carbon footprint can be reduced to mitigate climate change (e.g., pastoral farming contributing methane to the atmosphere, standing forests as carbon sinks). This will contribute to the design of more equitable emission reduction policies and help to target specific activities that will be at risk from climate change from an economic (types of farming), societal (human habitations at greater risk of flooding), and cultural (urupā and cemeteries at risk of coastal erosion or flooding) viewpoint</li> <li>• giving a picture of land management and use activities which can then input into freshwater modelling and pollution estimation. This will be a step towards an accounting system for freshwater quality and quantity and aligns well with the objectives and directions of the existing government programmes</li> <li>• giving a picture of how our natural resources (e.g., highly productive land) are utilised and the effects of urbanisation or fragmentation of the land.</li> </ul> <p>This investment opportunity will contribute to the Government outcomes around <i>Improving children’s wellbeing and reducing inequality</i> by understanding the current use of Māori held land (in largely lesser productive areas) with a view to improving the productivity of Māori land. This will raise the economic returns to Māori households with children and consequently reduce child poverty.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Scoping of work</li> <li>• Development of an integrated land use system – data architecture, classifications, specifications, protocols, methods, maps, temporal scale, etc</li> <li>• Classification systems for land use</li> <li>• Mapping of actual land use (rural and urban classes to be defined).</li> </ul> <p>In the iwi-Māori engagement, the importance of land in relation to its use and the environment was noted.</p>
<p><b>Current state</b></p>	<p>The Land Cover Database (LCDB), maintained by Manaaki Whenua – Landcare Research and funded by MBIE, is a nationally comprehensive land use map of New Zealand covering the dates 1996, 2001, 2008, 2012 and 2018. However, we do not have a nationally consistent measure of land use to link local activities to local change.</p> <p>There are insufficient monitoring sites to provide reliable measurement of soil erosion and there is a lack of good data on soil health, and detailed elevation mapping across NZ and outlying islands at sub-metre resolution. It does not have ongoing funding for updates.</p> <p>MfE’s Land Use and Carbon Analysis System (LUCAS) programme maps land use change for greenhouse gas reporting, but this mapping is very forestry/carbon focused and does not provide much needed information on other agricultural and urban land uses.</p>

## Environment Pillar

### Nationally consistent measurement of land use (continued)

<p><b>Opportunity</b></p>	<p>If we better understand land, its profile, and its use, then we can better understand our greenhouse gas profile, water pollution (nutrient and particulate), the impact of removing vegetation on the flow of ecosystem services from native vegetation, and natural disaster risk profile.</p> <p>The opportunity is to invest in an NZ land use information system which enables information on land use to be gathered consistently and aggregated to provide a national as well as a regional picture. This would draw on available data where applicable and allow us to build a picture of land use change over time. Mapping land use consistently across Aotearoa New Zealand and over time would enable a better understanding of the impacts of land use on ecosystem services, support modelling of the impacts of climate change and help profile natural disaster risks, among other benefits.</p> <p>If we better understand the land, its profile, and its use, we can better understand:</p> <ul style="list-style-type: none"> <li>• our greenhouse gas profile</li> <li>• impacts on water quality (nutrient and particulate)</li> <li>• the impact of removing vegetation on the flow of ecosystem services from native vegetation</li> <li>• natural disaster risk profile</li> <li>• regional/local biosecurity risks and optimal responses to biosecurity incursions</li> <li>• what our productive land resources look like and focus on deriving value from under-utilised land</li> <li>• exposure to climate risks for the National Adaptation Plan.</li> </ul>
<p><b>Status</b></p>	<p>Options to consider how to progress this work are being considered but are currently not funded. These include:</p> <ul style="list-style-type: none"> <li>• conducting a survey of users of land use information (including regional councils, iwi, commercial sector) to understand user needs and how they will use the maps</li> <li>• developing use cases to explore the utility of a land use information system – potentially for climate change adaptation, pest management, water allocation</li> <li>• conducting a requirements analysis based on existing and upcoming legislation</li> <li>• defining the land uses that will be covered by the mapping and the spatial resolution required to achieve this</li> <li>• developing a strategic investment plan including scheduling/integrating updates for the LUCUS and ongoing funding for the input data, including maps such as the LCDB</li> <li>• undertaking discovery of existing information (data and systems) and information that we know will become available in the next few years (e.g., Freshwater farm plan data)</li> <li>• developing governance arrangements.</li> </ul>

## Environment Pillar

### Nationally consistent measurement of land use (continued)

<b>Key interdependencies</b>	<p>This investment opportunity has interdependencies with a number of central government initiatives that are looking to improve the spatial representation of land use for a range of different reasons including:</p> <ul style="list-style-type: none"> <li>• Agricultural Production Census (Stats NZ) – greater insights from spatial representation and cost savings from remote sensing</li> <li>• National Exotic Forest Description (MPI) – more accurate and complete forestry information and better coverage, collected electronically from the next survey onwards (2022)</li> <li>• Freshwater Farm Planning (MfE) – improved water quality through targeted mitigation planning</li> <li>• Integrated farm planning (MPI) – streamlined compliance for farmers through entering data once and using it for multiple purposes</li> <li>• LUCAS Land Use Mapping (MfE) – more efficient and timely forestry land use change data to support new domestic greenhouse gas emissions reporting cycles</li> <li>• Valuation Data aggregation (LINZ) – to build a national picture of properties to enable notification of subdivision and urban zoning.</li> </ul> <p>This investment opportunity will link to the following opportunities:</p> <ul style="list-style-type: none"> <li>• <i>Enhanced and standardised climate change data</i></li> <li>• <i>Granular housing affordability and homelessness measurement.</i></li> </ul>
<b>Responsible agencies</b>	<p>Ministry for the Environment. Ministry for Primary Industries.</p>
<b>Contributing agencies</b>	<p>Toitū Te Whenua (Land Information NZ). Department of Conservation. National Emergency Management Agency (NEMA) tbc.</p>

### Enhanced and standardised climate change data

<b>Description</b>	<p>This opportunity contributes to Protecting our environment for the future.</p> <p>The wellbeing of Aotearoa New Zealand (and the world) is under threat from the impacts of Climate Change. We need to extend our coverage of data on climate change to understand changes to national, regional, and local climate impacts on the natural and built environment, our social wellbeing, and the economy.</p> <p>We need to understand the outcomes of adaptation action undertaken to address climate change. For example, this would identify areas where households would need to be relocated to avoid increased risk of regular flooding or help us decide where to build in the future or what crops to farm.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Observational data which detail the current and historical climate. Climate data records provide a baseline for understanding our climate</li> <li>• Generating fundamental climate projections to aid in understanding future climate-related risk</li> <li>• Integration of greenhouse gas emissions data with land use, social and economic data to measure and report on effects of climate change emission reduction policy</li> </ul> <p>Taiao/Waiora quality and climate change effects were a common theme in the iwi-Māori engagement. There was particular emphasis on the quality of water.</p>
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## Environment Pillar

### Enhanced and standardised climate change data (continued)

<p><b>Current state</b></p>	<p>There is an increasing need to monitor the sources of emissions and impacts of climate change (e.g., impacts of climate change on biodiversity). Data on hazards, impacts and vulnerabilities is needed to evaluate resilience (including iwi- hapū), and drive adaptation and mitigation strategies (e.g., forecasting and managing water inundation).</p> <p>Due to climate change, New Zealand is and will be faced with climate hazards of increasing frequency and intensity. To assess climate-related risk for mitigation and adaptation purposes, New Zealand needs high quality and accessible climate data that provides decision-makers with the necessary information to confidently take climate action.</p> <p>Climate data is not a definite term but rather a phrase that refers to a range of climate data products that relate to climate. These climate data products detail historic, current, and future changes to our climate and give users an understanding of change over different temporal and spatial planes. Broadly, this data can be divided into three types:</p> <ul style="list-style-type: none"> <li>• observational data which detail the current and historical climate. Climate data records provide a baseline for our climate and validate climate models</li> <li>• projections which aim to provide a simulated response (change in climate variables) of the climate system to scenarios of future emissions. Outputs aid in understand future climate-related risk</li> <li>• greenhouse gas emission data which detail the level of contribution to climate change.</li> </ul>
<p><b>Opportunity</b></p>	<p>If we monitor our emissions well, then we will be able to keep stock of our carbon inventory and meet our national climate goals. Maintenance of the Greenhouse Gas Inventory is important for international reporting.</p>
<p><b>Status</b></p>	<p>The quality of generated observational data and the stability of the related infrastructure are at risk of degrading over time.</p> <p>A new set of climate change projections is expected to be delivered in June 2024.</p> <p>Adaptation and climate risks are targeted for 2024-2027.</p>
<p><b>Key interdependencies</b></p>	<p>The investment opportunity <i>Nationally consistent measurement of land use over time</i> is a key dependency for this work to allow climate change impacts and actions to be measured locally.</p>
<p><b>Responsible agencies</b></p>	<p>Ministry for the Environment. Ministry of Primary Industries.</p>
<p><b>Contributing agencies</b></p>	<p>Stats NZ. Department of Conservation. Ministry of Business, Innovation &amp; Employment.</p>



## Environment Pillar

### Enhanced data on the impact of natural disasters

<b>Description</b>	<p>Natural hazards pose a threat to Aotearoa New Zealand’s economy and people. These include droughts, earthquakes, tsunami, landslides, flooding, coastal inundation, volcanic eruptions, and extreme weather.</p> <p>Many of these have the potential to be exacerbated with the increased risks posed by climate change.</p>
<b>Current state</b>	<p>There is limited data on the social, economic, and environmental impacts of natural disasters in Aotearoa New Zealand (e.g., mortality, injury, displacement, asset damage).</p> <p>The identified risk of future disasters posed by natural hazards means there is a need to strengthen our disaster preparedness.</p> <p>We also have an international obligation to report to the United Nations under the Sendai Framework for Disaster Risk Reduction 2015-2030. The Sendai framework provides a roadmap for how to make our communities safer and more resilient to disasters.</p>
<b>Opportunity</b>	<p>If the impacts of natural disasters can be measured, then agencies will have the information they need to put in place strategies to reduce disaster risks and losses to ensure a safer, sustainable future.</p>
<b>Status</b>	<p>Work has been initiated but it has not been coordinated (e.g., insurance companies).</p>
<b>Key interdependencies</b>	<p>This investment opportunity has links with the following opportunities:</p> <ul style="list-style-type: none"> <li>• nationally consistent measurement of land use</li> <li>• enhanced and standardised climate change data</li> <li>• new measurement framework for ecosystem services</li> <li>• new measurement framework for equity</li> <li>• new measures for family and whānau wellbeing.</li> </ul>
<b>Responsible agencies</b>	<p>Ministry for the Environment. Ministry of Business, Innovation and Employment.</p>
<b>Contributing agencies</b>	<p>Department of Conservation. National Emergency Management Authority.</p>

## Environment Pillar

### Improved water quality data

<p><b>Description</b></p>	<p>This investment opportunity contributes to <i>Protecting our environment for the future</i> by developing:</p> <ul style="list-style-type: none"> <li>• robust monitoring and data standards to understand the state (quality and quantity) of New Zealand’s freshwater, coastal and estuarine water bodies</li> <li>• system infrastructure that will enable the data to be aggregated from a local to national scale.</li> </ul> <p>This national data will then be able to be combined with other nationally held data to provide a more holistic view of the state of the environment.</p> <p>This initiative will support policy implementation effectiveness, resource management, national state of the environment indicators, and New Zealand’s System of Environmental-Economic Accounting (SEEA) on freshwater by providing:</p> <ul style="list-style-type: none"> <li>• quality data to develop models predicting the impact of climate change on water stocks and flow.</li> </ul> <p>An optimised national network for freshwater accounting. This would ensure national consistency in data collection and reporting, and would:</p> <ul style="list-style-type: none"> <li>• enable additional value to be obtained from New Zealand’s data system</li> <li>• be highly valuable for national state of the environmental reporting</li> <li>• enable the Ministry for the Environment to provide effective direction and tools to councils, supporting them to fulfil their regulatory obligations</li> <li>• provide data on water availability and security to identify opportunities for the food and fibre sector and supporting communities to transform their need for, and use of, water.</li> </ul> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Scope the data infrastructure and platform requirements to host and analyse datasets. This would centralise data for national freshwater accounting by bringing together data on flows and takes from the networks operated by regional councils, Crown Research Institutes and other organisations</li> <li>• A set of nationally standardised indicators and methods for data collection (already underway – see draft report produced for MfE on freshwater accounting)</li> <li>• A set of nationally standardised methods for data analysis and reporting (see draft report produced for MfE on freshwater accounting)</li> <li>• Accounting models that can allow for interpolation/extrapolation between sites and over time, at the water management unit level</li> <li>• An MfE-led data pipeline for water abstraction data, via established relationships with regional council scientists, accessing all existing water quantity data</li> <li>• A data gap analysis</li> <li>• Determination of the requirements to get data to the desired state and implement measures to achieve this – working with councils to develop guidance as required.</li> </ul>
<p><b>Current state</b></p>	<p>There is limited monitoring of biological, chemical, and particulate contaminants within waterways. Data collection and standards are inconsistent across the regions.</p> <p>There is a need for a national database to understand water quality across the country, and to monitor the flow of pollutants as they move through catchments.</p>
<p><b>Opportunity</b></p>	<p>If improved water quality data is collected, then agencies will be able to monitor and understand the flow of pollutants through New Zealand’s waterways.</p>
<p><b>Status</b></p>	<p>A programme of work is being developed.</p>

## Environment Pillar

### Improved water quality data (continued)

<b>Key interdependencies</b>	Interdependencies associated with this investment opportunity include: <ul style="list-style-type: none"> <li>• <i>nationally consistent measurement of land use</i></li> <li>• <i>enhanced and standardised climate change data.</i></li> </ul>
<b>Responsible agencies</b>	Ministry for the Environment.
<b>Contributing agencies</b>	Ministry for Primary Industries.

### Improved data on aquifer health and groundwater abstraction

<b>Description</b>	<p>This investment opportunity contributes to <i>Protecting our environment for the future</i> by understanding national freshwater stocks by looking at stocks and abstractions (removal from stocks) from all types of water bodies (groundwater and surface water). Information on inflows, outflows and exchanges between surface water, groundwater, rivers, and lakes are necessary to produce a comprehensive water account.</p> <p>This would enable the use of water to be maximised subject to the amount available and impacts on its quality. For example, the productive use of land could be better managed to account for the available quantity and quality of water.</p> <p><b>Specific initiatives</b></p> <p>Phase 1 (Year 1):</p> <ul style="list-style-type: none"> <li>• Scoping, current state assessment and prioritisation of water system investment</li> <li>• Scoping discussion across the wide sector (including regional councils and iwi/Māori)</li> <li>• Prioritise investment opportunities through an engagement process.</li> </ul> <p>Phase 2 (year 2):</p> <ul style="list-style-type: none"> <li>• Design and development of water monitoring standards, data standards and data infrastructure</li> <li>• Data/statistical infrastructure</li> <li>• Gather user and system requirements for water system data architecture</li> <li>• Propose future system architecture design</li> <li>• Development and implementation of ontologies and data standards for water data</li> <li>• Engage across the sector to develop, socialise, seek endorsement, and implement ontologies and data standards for existing water data</li> <li>• Engage across the sector to develop, socialise, seek endorsement, and implement ontologies and data standards for future data requirements</li> <li>• Ongoing support for monitoring standards and methodology</li> <li>• Enhance the ongoing support and funding for the identification, development, and implementation of monitoring standards.</li> </ul> <p>Phase 3 (year 3, onwards):</p> <ul style="list-style-type: none"> <li>• Implementation of water systems architecture, and monitoring and data standards.</li> </ul>
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## Environment Pillar

### Improved data on aquifer health and groundwater abstraction (continued)

<b>Current state</b>	<p>There is limited data relating to water stored in aquifers and the quantity of water taken from lakes and rivers. This has made it difficult to measure our water stocks at any point in time.</p> <p>A lack of understanding could lead to overuse of water systems leading to negative environmental outcomes. For example, an overused aquifer will draw water and nutrients away from the surface.</p>
<b>Opportunity</b>	<p>If we understand our water stocks, then we can manage water more effectively, including the effects of projected climate change on the flow of water in rivers and aquifers.</p>
<b>Status</b>	<p>A programme of work is in the developing stage.</p>
<b>Key interdependencies</b>	<p>The investment opportunity on Māori data governance is seen as a key interdependency for this investment.</p>
<b>Responsible agencies</b>	<p>Ministry for the Environment.</p>
<b>Contributing agencies</b>	<p>Regional Councils.  National Institute of Water and Atmosphere (NIWA).  Geological and Nuclear Sciences (GNS).  Ministry of Primary Industries (MPI).  Department of Conservation (DoC).  Toitū Te Whenua/Land Information New Zealand (tbc).</p>



## Environment Pillar

### New measurement framework for ecosystem services

<b>Description</b>	<p>There is a growing awareness that the lack of data on the connections between the environment and people, as well as lack of measurement of how nature contributes to our wellbeing, is hindering our ability to factor these benefits/loses into the development of effective solutions.</p> <p>The budgetary process managed by The Treasury and various regulatory processes relating to natural resources does not recognise these connections, thus exposing New Zealand to the risks of decisions on spending and regulation that do not fully consider the flow-on effects on the environment and long-term impacts on future generations.</p> <p>Iwi-Māori engagement showed support for improved data on ecosystem services.</p>
<b>Current state</b>	<p>There is limited data in New Zealand on the contribution (positive) of nature to humans. A framework to measure the contribution has not been developed, and its absence is impeding the coherence and development of existing measurement efforts, making it difficult to measure and attribute the benefits provided by our ecosystems (e.g., the benefit of pollination from biodiverse ecosystems to our agriculture sector).</p> <p>Development of a framework should consider inclusion of indigenous local knowledge identified as mātauranga and mātauranga-a-iwi (localised Māori knowledge).</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Development of conceptual framework for ecosystem services</li> <li>• Development of measurement framework for ecosystem services.</li> </ul>
<b>Opportunity</b>	<p>By better understanding the benefits our ecosystems provide to our wellbeing we will be able to monitor the health of these ecosystems. This monitoring process will create more evidence to support the protection and enhancement of our most valuable resources.</p>
<b>Status</b>	<p>Manaaki Whenua Landcare Research has done some ad hoc work on the development of a conceptual and measurement framework for nature's contributions to people.</p>
<b>Key interdependencies</b>	<p>A conceptual framework would help connect other data gaps highlighted in the Plan, including the investment opportunities around water quality, water abstraction, and climate change data.</p> <p>These data gaps would be able to be mapped onto the conceptual framework to provide base information and indicators to monitor progress towards sustainability goals.</p> <p>A link to the <i>New te ao Māori measures of wellbeing</i> is also to be established.</p>
<b>Responsible agencies</b>	<p>Ministry for the Environment. Department of Conservation.</p>
<b>Contributing agencies</b>	<p>Treasury. Stats NZ. Ministry of Primary Industries.</p>

## Environment Pillar

### Improved data on waste

<p><b>Description</b></p>	<p>This investment opportunity contributes to <i>Protecting our environment for the future</i>. Improving the quality of our data on waste is necessary to support our ability to:</p> <ul style="list-style-type: none"> <li>• monitor the generation and disposal of waste and compliance to obligations of waste generators and disposers</li> <li>• develop and evaluate effective policies and actions to reduce waste generation, encourage recycling and better manage the disposal of waste.</li> </ul> <p>Better data will allow us to track our progress toward a circular economy and show how we manage resources to make and use products, and what we do with the materials afterwards. For example, tracking recyclable materials to understand which can be recycled through the global market and determining what domestic re-processing facilities NZ needs (e.g., where there are no international markets). This could also reduce the emission of greenhouse gases from landfills, reducing New Zealand’s carbon footprint.</p> <p>The following are identified data gaps:</p> <ul style="list-style-type: none"> <li>• farm fills – mapping locations of farms fills, the materials they contain and their disposal (e.g., burying, burning, or stockpiling)</li> <li>• lifecycle analysis data – tracking material through the economy from production through to disposal and understanding its footprint (including imported/exported products)</li> <li>• data on global materials markets – tracking recyclable materials through the global market to better understand the markets for those materials, and better understand what domestic re-processing facilities NZ needs (e.g., where there are no international markets)</li> <li>• infrastructure stocktake – to establish a 3–5-year rolling stocktake of NZ’s waste and re-processing infrastructure to inform waste minimisation initiatives and investment</li> <li>• wastewater – datasets on the composition, volumes, locations of waste discharge and the emissions associated with these (excluding disposal to freshwater if this is covered elsewhere).</li> </ul>
<p><b>Current state</b></p>	<p>There is limited data available on the generation, recycling, reuse and disposal of waste. The data that is collected is not sufficient for the System of Environmental Economic Accounting (SEEA) reporting.</p> <p>More data is required to gain an understanding of New Zealand’s waste.</p>
<p><b>Opportunity</b></p>	<p>Improving the quality of our waste data is necessary to support our ability to develop and evaluate effective policies and actions, and to support better monitoring and compliance. Better data will allow us to track our progress toward a circular economy.</p>
<p><b>Status</b></p>	<p>Work is being undertaken to improve the measurement of waste in some areas e.g., extension of the waste levy scheme to cover more sites, measurement of littering funded by the Waste Minimisation Act 2008 and continued citizen science work measuring foreshore waste.</p>
<p><b>Key interdependencies</b></p>	
<p><b>Responsible agencies</b></p>	<p>Ministry for the Environment. Ministry of Business, Innovation and Employment.</p>
<p><b>Contributing agencies</b></p>	

## Environment Pillar

### Further Environment Pillar opportunities

Additional prioritised investment opportunities for the environment pillar are listed below.

Improved data is needed on ecosystem extent/condition – freshwater, marine and terrestrial. Existing data is incomplete.	Improved data on the conservation status of species.
More comprehensive monitoring of air quality.	Enhanced biodiversity data and collections with new genomic information.



## Society Pillar

### More accurate and frequent measurement of population

<p><b>Description</b></p>	<p>This opportunity contributes to both <i>Improving children’s wellbeing and reducing inequality</i> and <i>Improving health &amp; housing outcomes for New Zealanders</i>.</p> <p>We need accurate measurement of specific populations of policy interest to allow the design and targeting of interventions to improve outcomes for these populations. For example, we know that Pacific youth have poorer employment outcomes than the general youth population. Having better data on the distribution of Pacific youth will enable employment interventions to be tailored to meet their specific needs.</p> <p>Better information on people in a parenting or caring role would help address the needs for this population group around accessing suitable housing, paid work and childcare. Iwi-Māori engagement showed strong support for more timely data on iwi-Māori beyond the 5-yearly census, including through the inclusion of iwi affiliation as a core variable in any people-centred data collections across the system.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Develop and implement an administrative population census</li> <li>• Develop options for increasing the use of administrative data in population estimates.</li> </ul>
<p><b>Current state</b></p>	<p>Aotearoa New Zealand’s primary source of information on population and sub-national population data is the Population Census. Over reliance on the Census can increase the risk profile of population data because of its inherent limitations (the Census is infrequent and does not count some population groups, including iwi and Māori, Pacific groups, as well as others).</p> <p>Aotearoa New Zealand’s population statistics are at risk of degradation as response rates to the Census continue to decline and as internal and external migration movements make it increasingly difficult to accurately model population change between censuses.</p> <p>Maintaining the quality of population statistics, including data on iwi-Māori, is needed to ensure that our population statistics remain fit for use.</p>
<p><b>Opportunity</b></p>	<p>If administrative data is used as Aotearoa New Zealand’s primary source of population data, the data would become more frequent and accurate. More accurate population and subpopulation data has implications across government – for example, in determining health funding and setting electoral boundaries. This opportunity is an iwi-Māori priority.</p> <p>This entails a shift from the traditional five-yearly Census to a sustainable administrative-based census that can be used to produce existing and new population statistics to support analysis, planning, and decision-making across all sectors.</p> <p>An administrative-based census would potentially need to be supplemented by a household survey programme to measure those population attributes not available from administrative data, and a method of measuring and adjusting for population under- and over-coverage.</p>
<p><b>Status</b></p>	<p>Stats NZ’s Census Transformation Programme undertook a series of investigations based on the 2013 Census to look at the ability of administrative data sources to provide census-type information. This work accelerated in response to the 2018 census (especially in regard to iwi-Māori population data).</p> <p>The Census Transformation Programme will continue in the lead-up to Census 2023.</p>
<p><b>Key interdependencies</b></p>	<p>Delivery of this opportunity is dependent on the <i>Additional registers and foundational data</i> opportunity. It also has links to <i>Consistent measurement of ethnicity across government</i> and <i>Strengthened Integrated Data</i>.</p>
<p><b>Responsible agencies</b></p>	<p>Stats NZ.</p>
<p><b>Contributing agencies</b></p>	<p>Many government and non-government bodies hold relevant administrative data.</p>



## Society Pillar

### Consistent measurement of ethnicity across government

<b>Description</b>	<p>This opportunity is foundational to enabling better insights across the data system. It will ensure that ethnic sub-populations are identified in a consistent way across the public sector administrative data system. This will assist in increasing the visibility of ethnic groups.</p> <p>It will also allow service delivery and interventions to be better targeted to Māori and ethnic populations such as Pacific Peoples, Asian etc. For example, targeting child poverty interventions in Pacific Peoples groups.</p> <p>Engagement with iwi-Māori highlighted the need for consistent measurement of Māori descent and iwi affiliation across the data system. These are related standards.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Review and mandating of the standard on ethnicity</li> <li>• Implementation of the ethnicity standard across public sector agencies.</li> </ul>
<b>Current state</b>	<p>Peoples' ethnic identity includes the ethnic group(s) they identify with as well as their ability to express their identity and speak their language. Although ethnicity data is widely collected, shared, and used across government, the data is often in different formats. Currently, there are differences in how ethnicity is defined in administrative data; for example, Māori can identify themselves by ethnicity, descent, or iwi affiliation and Fijian Indians can be classified as Pacific Peoples or Indian depending on how data is collected and aggregated.</p> <p>Consistent measurement of ethnicity across government is needed to eliminate this problem and allow agencies to share data more effectively (across existing privacy and security settings).</p>
<b>Opportunity</b>	<p>With consistent measurement of ethnicity across government, data will be more readily reused and combined, enabling users to better draw insights from multiple data sources (across existing privacy and security settings). This will lead to a more inclusive and integrated data system.</p>
<b>Status</b>	<p>Stats NZ has commenced both the ethnicity review and mandated standard process.</p> <p>Reviews of Māori descent and iwi affiliation are also underway.</p>
<b>Key interdependencies</b>	<p>This investment opportunity has links to the following investment opportunities:</p> <ul style="list-style-type: none"> <li>• <i>development of equity framework</i></li> <li>• <i>more accurate and frequent measurement of population</i></li> <li>• <i>improving the visibility of populations of policy interest.</i></li> </ul>
<b>Responsible agencies</b>	<p>Stats NZ.</p>
<b>Contributing agencies</b>	<p>Public Services Commission.          Ministry of Health.          Ministry of Education.          Ministry of Social Development.          Ministry of Justice.          Department of Internal Affairs.          NZ Police.</p>

## Society Pillar

### Sustainable and enhanced data on victims of crime

<b>Description</b>	<p>This opportunity will contribute to <i>Improving children's wellbeing and reducing inequality</i> by providing a sustainable funding source for the New Zealand Crime and Victims Survey (NZCVS).</p> <p>This survey provides a more comprehensive picture of crime than police statistics, filling gaps in crime reported to the Police. Data about crime victimisation informs policies aimed at both reducing crime and the effects on victims. For example, these policies contribute to improving the wellbeing of children by identifying where family violence occurs. It is planned to use this survey to collect data on child victimisation in the future.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Continuation of the NZCVS on an annual basis</li> <li>• Enhancements to the survey.</li> </ul>
<b>Current state</b>	<p>Aotearoa New Zealand collects its victimisation data through the New Zealand Crime and Victims survey (NZCVS). To date this survey has been funded annually through a contestable research pool. Limited data is available from the survey on some types of victimisations (e.g., child abuse, abuse of disabled people, elderly abuse).</p> <p>The NZCVS is a nationwide, face-to-face, annual, random-sample survey. Adults aged 15 and over and living in private dwellings are interviewed about their experiences of crime in New Zealand over the previous 12 months.</p> <p>The survey provides the most accurate data on the level of crime in Aotearoa New Zealand. There are currently no alternative methods for collecting data of comparable value.</p> <p>The survey data delivers the following outcomes:</p> <ul style="list-style-type: none"> <li>• supports evidence-based policies to reduce offending and victimisation and supports victims of crime</li> <li>• helps identify areas for policy and operational initiatives required to respond to victimisation</li> <li>• supports measurement of the transformation of the New Zealand criminal justice system.</li> <li>• enables government to understand the impact of policy settings on outcomes relating to victimisation.</li> </ul> <p>This survey is now funded in an on-going manner from a successful budget bid in 2022.</p>
<b>Opportunity</b>	<p>Multiple agencies which are reliant on data from the NZCVS will continue to develop insights and form strategies around the survey's findings. The data will be used for both national and international reporting (e.g., Indicators Aotearoa NZ, UN Sustainable Development Goals).</p> <p>Continuation and enhancement of the NZCVS is also needed so that the survey can contribute more fully to the Government's wellbeing and child poverty objectives, for example by collecting data on child victimisation and race-based and homophobic/transphobic violence.</p>
<b>Status</b>	<p>The Ministry of Justice received four years funding in the 2022 Budget for NZ Crime and Victims research. This funding will ensure that the NZCVS can continue to be run on an annual basis and will enable enhancements to the survey to be made.</p>
<b>Key interdependencies</b>	<p>This investment opportunity is relevant to the <i>Improved data on the wellbeing of children and youth opportunity</i>.</p>
<b>Responsible agencies</b>	<p>Ministry of Justice.</p>
<b>Contributing agencies</b>	<p>NZ Police. Department of Corrections.</p>

## Society Pillar

### Centralised Primary health care data

<b>Description</b>	<p>This opportunity contributes to <i>Improving health and housing outcomes for New Zealanders</i>.</p> <p>Much primary health data is incomplete and lacks coherence because of the complexity and distributed nature of primary health care services.</p> <p>This initiative aims to provide a consistent way of collecting and storing data across the primary health sector in a comparable way to hospital admissions health sector data. It will contribute to more coherent information, including information about mental health and chronic diseases like diabetes.</p> <p>This will enable targeted interventions and more rapid assessment of outcomes. Iwi-Māori engagement identified a need for improved information on iwi-Māori health outcomes, particularly in relation to wairua/spiritual health.</p>
<b>Current state</b>	<p>Aotearoa New Zealand does not have a nationally held collection of primary health care data. There are no data reporting standards, leading to difficulties in collating health data from different providers.</p> <p>This has led to underestimation of certain diseases and illnesses.</p>
<b>Opportunity</b>	<p>The health sector reforms provide an opportunity to improve the quality and accessibility of data on primary health care in Aotearoa New Zealand.</p> <p>Improved management of data across the health and disability sector is needed to get the best value of the data collected. More timely, consistent, and accessible data will lead to improved interventions and to improved equity of health outcomes.</p>
<b>Status</b>	<p>Stats NZ has not initiated any work as New Zealand's health system is undergoing large scale change. As part of this change the Ministry of Health and/or Te Whatu Ora will look to establish national data reporting standards.</p>
<b>Key interdependencies</b>	<p>This will inform other investment opportunities including:</p> <ul style="list-style-type: none"> <li>• <i>Improved data on mental health</i></li> <li>• <i>Improved data on the wellbeing of children and young people.</i></li> </ul>
<b>Responsible agencies</b>	<p>Ministry of Health.</p>
<b>Contributing agencies</b>	<p>Social Wellbeing Agency. Stats NZ.</p>

## Society Pillar

### Data on mental health and addiction

<b>Description</b>	<p>This investment opportunity contributes to <i>Improving health &amp; housing outcomes for New Zealanders</i> by providing a better understanding of who is experiencing mental health and addiction issues.</p> <p>This will allow improved targeting of policies and interventions to address these issues at a national and community level. For example, it may allow better delivery of programs to deal with methamphetamine addiction at the community level.</p>
<b>Current state</b>	<p>There is limited availability of data surrounding mental health and addiction. Most mental health and addiction patients are referred to primary care providers where a lack of national data reporting standards has made it difficult to collate information.</p>
<b>Opportunity</b>	<p>The health sector reforms provide an opportunity to improve the quality and accessibility of data on primary health care in Aotearoa New Zealand. Better management of primary health care data will support the development of improved data on mental health and addiction.</p>
<b>Status</b>	<p>Under consideration.</p>
<b>Key interdependencies</b>	<p>This investment opportunity will build on the <i>Centralised primary health care</i> data investment opportunity. The investment opportunity <i>Enhanced visibility of populations of policy interest in data</i> is also related to this investment opportunity.</p>
<b>Responsible agencies</b>	<p>Ministry of Health.</p>
<b>Contributing agencies</b>	<p>Social Wellbeing Agency.          Department of Internal Affairs.          Ministry of Social Development.          Mental Health &amp; Wellbeing Commission.</p>

## Society Pillar

### New measurement framework for equity

<b>Description</b>	<p>Equity is defined by the World Health Organization as the absence of unfair, avoidable, or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically or by other dimensions of inequality (e.g., sex, gender, ethnicity, disability, or sexual orientation).</p> <p>Equity moves beyond equality to recognise that, even if the system offers equality of treatment, particular groups need assistance to ensure equal access and outcomes.</p> <p>Improved data on equity is a priority for iwi-Māori.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Development of a conceptual framework for equity</li> <li>• Development of a measurement framework for equity.</li> </ul>
<b>Current state</b>	<p>It is difficult to respond to equity issues in New Zealand without an agreed conceptual and measurement framework.</p> <p>Data lacks the granularity required to form meaningful conclusions, particularly within vulnerable populations.</p>
<b>Opportunity</b>	<p>If we can understand equity within our society, then we can identify areas for improvement and put measures in place to avoid negative outcomes in education, justice, and health for our vulnerable groups.</p> <p>A measurement framework will provide a consistent and comprehensive way of defining and measuring equity. It will support understanding and action towards equitable outcomes.</p> <p>This will inform policy decisions as well as help identify priority areas that the Government should focus on.</p>
<b>Status</b>	<p>The Ministry of Education has developed an Equity Index for allocating funding to schools. This work has the potential to inform the development of a broader measurement framework on equity.</p>
<b>Key interdependencies</b>	<p>This opportunity has connections with the following investment opportunities:</p> <ul style="list-style-type: none"> <li>• <i>Strengthened Integrated Data</i></li> <li>• <i>Additional registers and foundational data</i></li> <li>• <i>Enhanced visibility of populations of policy interest.</i></li> </ul>
<b>Responsible agencies</b>	<p>Stats NZ.</p>
<b>Contributing agencies</b>	<p>Social Wellbeing Agency.          Ministry of Business, Employment, and Innovation.          Ministry of Health.          Ministry of Justice.          Te Puni Kokiri.          Ministry of Pacific Peoples.          Treasury.          Ministry for Women.          Ministry of Social Development.          Ministry of Disabled People.</p>

## Society Pillar

### More frequent data on unpaid and voluntary work

<b>Description</b>	<p>This investment opportunity contributes to <i>Building the economy</i> by measuring and making visible the economic activity generated from unpaid and voluntary work. Improved data on unpaid and voluntary work will provide insight into how it contributes to <i>Improving children's wellbeing and reducing inequality</i> (e.g., provision of free food in schools), <i>Improving health &amp; housing outcomes for New Zealanders</i> (e.g., volunteers working in hospitals) and <i>Protecting our environment for the future</i> (e.g., measuring and removing litter on the seashore).</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Scoping of options is underway.</li> </ul>
<b>Current state</b>	<p>There is a lack of timely data on unpaid and voluntary work. The last Time Use Survey was completed in 2009. The data lack robustness for some populations of policy interest.</p>
<b>Opportunity</b>	<p>If frequent data on unpaid and voluntary work is captured, then agencies can understand the contribution made by households and the not-for-profit sector and areas that require support.</p>
<b>Status</b>	<p>A range of options is being developed for consideration.</p>
<b>Key interdependencies</b>	<p>The investment opportunity <i>Enhanced visibility of populations of policy interest</i> will also contribute to this opportunity.</p>
<b>Responsible agencies</b>	<p>Stats NZ.</p>
<b>Contributing agencies</b>	<p>Contributing agencies include:</p> <ul style="list-style-type: none"> <li>• Ministry for Women</li> <li>• Ministry of Health</li> <li>• Ministry of Culture &amp; Heritage</li> <li>• Treasury</li> <li>• Ministry of Business, Innovation &amp; Employment</li> <li>• Ministry of Social Development</li> <li>• Oranga Tamariki</li> <li>• Ministry of Education</li> <li>• Te Puni Kōkiri</li> <li>• Whaikaha – Ministry of Disabled People</li> <li>• Human Rights Commission</li> <li>• Department of Internal Affairs</li> <li>• Social Wellbeing Agency.</li> </ul>

## Society Pillar

### New measures for family and whānau wellbeing

<b>Description</b>	<p>Families perform critical functions (e.g., providing financial and emotional support, creating a sense of identity and belonging) that are not only important for their members, but also to society at large.</p> <p>When families are unable to perform these functions, the state is often called on to assist families, or in extreme circumstances (e.g., child neglect), replace those functions entirely.</p> <p>Governments also rely on families to make services more effective in some areas. For example, the education system relies on parents to support their children’s learning to make education services effective. As such, families are both a target of, and an important vehicle for social policy.</p> <p>Improved data on iwi-Māori collectives, including whānau and whānau- wellbeing was identified as a priority during engagement with iwi-Māori.</p>
<b>Current state</b>	<p>There is a paucity of data on family and whānau social and economic wellbeing.</p> <p>Existing measures focus predominantly on individual wellbeing, as opposed to family and whānau wellbeing. An exception is the experimental data on whānau wellbeing collected in Te Kupenga, the Māori wellbeing survey carried out every 10 years.</p> <p>An agreed approach to measuring family and whānau wellbeing needs to be developed.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Development of conceptual and measurement framework for family wellbeing</li> <li>• Development of conceptual and measurement framework for whānau wellbeing.</li> </ul>
<b>Opportunity</b>	<p>If family and whānau wellbeing can be measured, then agencies can determine which families need support and how to provide that support.</p>
<b>Status</b>	<p>Ministry of Social Development has undertaken exploratory work on the development of a <i>Family wellbeing conceptual framework</i> and its associated measurement indicators. The conceptual framework is important in clarifying what we mean by family wellbeing, where our knowledge gaps are, and how family wellbeing impacts the wellbeing of individual family members and society at large.</p>
<b>Key interdependencies</b>	<p>The conceptual and measurement framework will need to connect to the <i>New Te Ao Māori measures of wellbeing</i> investment opportunity.</p>
<b>Responsible agencies</b>	<p>Ministry of Social Development. Te Puni Kōkiri.</p>
<b>Contributing agencies</b>	<p>Stats NZ. Social Wellbeing Agency. Ministry for Women.</p>

## Society Pillar

### Further opportunities

Additional prioritised investment opportunities for the society pillar are listed below.

Standardised injury definitions.	More timely health expectancy and cause of death data.
Families/whānau identified in administrative data.	Broader measures of democratic participation, including global citizenship.
De facto partnerships identified in administrative data.	New data on education experiences and barriers to participation.
New measure on recidivism.	Improved availability of data on organised crime.
Improved monitoring of engagement in cultural activities.	Broader measures of institutional trust that adhere to OECD guidelines.
Improved measurement of identity groups and their outcomes.	Enhanced data on the quality, costs and barriers to Early Childhood Education participation.
New measures for subjective wellbeing.	Regular assessment of the costs of crime.
Improved data on access to community support.	Relaunched Public Perceptions of Crime Survey.
New conceptual and measurement framework for Wairau / spiritual health.	Improved data on progression through the education system, informal education, and training.
Enhanced skills classification framework and improved data on competencies, including digital literacy.	



## Populations of Policy Interest dimension

### Improved data on the wellbeing of children and young people

<b>Description</b>	<p>This investment opportunity contributes to <i>Improving children's wellbeing and reducing inequality</i>.</p> <p>Currently we lack consistent data to monitor the wellbeing of children and young people in the context of their whānau and environment, and from Te ao Māori perspectives of wellbeing.</p> <p>This investment opportunity aims to provide more comprehensive and internationally comparable information on wellbeing and the factors that lead to positive outcomes as well as those that contribute to poor outcomes. For example, it will allow improved data on the wellbeing of disabled children and promote aspects that contribute to good wellbeing outcomes for them. Improved data on the wellbeing of tamariki was identified as a priority during engagement with iwi-Māori.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Youth health and wellbeing survey (What about me?)</li> <li>• Cross-agency child &amp; youth wellbeing data strategy</li> <li>• Te ao Māori measurement framework development</li> <li>• Improvements to existing agency collections</li> <li>• Development of a suite of cross-sectional surveys.</li> </ul>
<b>Current state</b>	<p>There is limited availability of regularly collected population-representative, cross-sectional data measuring how children and young people under 25 years are doing, how they are developing, and what they are facing, in the context of their whānau, community and environment.</p> <p>This makes it difficult to form a meaningful picture of their wellbeing, the changes in their wellbeing over time, and assess differential wellbeing between groups of children and young people to support public accountability, policy development, investment decisions and service improvement.</p>
<b>Opportunity</b>	<p>If we invest in the strategic development of the child and youth wellbeing data ecosystem (including coordination and leadership, data infrastructure and data collection), we will be able to meaningfully measure the wellbeing outcomes for all children and young people, and Aotearoa New Zealand will gain:</p> <ul style="list-style-type: none"> <li>• better data (coverage and quality) that tells a richer or more meaningful story of the wellbeing of children and young people, particularly in policy priority areas</li> <li>• data that is more accessible, more widely used to inform decision making, and of a more consistent quality</li> <li>• the ability to benchmark and compare results internationally</li> <li>• a more cohesive and strategic approach to child and youth wellbeing data investment, and improved coordination with inter-dependent data investments.</li> </ul>
<b>Status</b>	<p>A Child and Wellbeing Strategy was developed in 2018. Ongoing investment has been made in the Youth Health and Wellbeing Survey series, and one-off investment was made for the development of a child wellbeing data improvement business case.</p>

## Populations of Policy Interest dimension

### Improved data on the wellbeing of children and young people (continued)

<b>Key interdependencies</b>	This investment opportunity has connections with the opportunities: <ul style="list-style-type: none"> <li>• <i>improved data on child poverty and energy hardship</i></li> <li>• <i>new measures of Te ao Māori wellbeing.</i></li> </ul>
<b>Responsible agencies</b>	Department of the Prime Minister and Cabinet.
<b>Contributing agencies</b>	Social Wellbeing Agency. Stats NZ. Te Puni Kōkiri. Ministry of Social Development. Oranga Tamariki. Ministry of Education (tbc). Ministry of Health (tbc).

### Enhanced visibility of populations of policy interest in data

<b>Description</b>	Governments seek to target resources to vulnerable populations for a variety of reasons relating to wellbeing and equity objectives.  Good quality data on these populations is critical to help target and prioritise interventions.
<b>Current state</b>	Household surveys often do not provide reliable data for populations of policy interest.  Linked data from administrative and other sources provides the cornerstone for improving the visibility of populations of policy interest in data.
<b>Opportunity</b>	If attributes are added to administrative data to enable the identification of populations of policy interest and data is integrated well, agencies will have better visibility of populations such as Pacific Peoples, migrants, homeless people etc.  This will enable them to better understand their needs and identify areas for intervention.
<b>Status</b>	Currently, there is no specific project designed to improve data on populations of policy interest. However, work to improve the quality of data in the IDI and develop a statistical person register should help improve data on these populations.
<b>Key interdependencies</b>	This investment opportunity has links to: <ul style="list-style-type: none"> <li>• <i>strengthened integrated data</i></li> <li>• <i>additional registers and foundational data opportunities.</i></li> </ul>
<b>Responsible agencies</b>	Stats NZ.
<b>Contributing agencies</b>	

## Populations of Policy Interest dimension

### Improved community level data

<b>Description</b>	<p>This investment opportunity contributes to <i>Improving children's wellbeing and reducing inequality</i> and <i>Improving health &amp; housing outcomes for New Zealanders</i>.</p> <p>It addresses the needs of community organisations to tailor their service delivery to their local needs. It also reflects the fact that data is often captured at a national or regional level and is not sufficiently granular for the service providers' needs.</p> <p>A better understanding of community needs and ability to deliver more effective services at the community level is an important part of strategies to improve wellbeing outcomes for health, housing, and children.</p> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Develop baseline aggregate data using the IDI</li> <li>• Securely store baseline data in Mahitahi data platform</li> <li>• Production ready data tool</li> <li>• Continual improvement of data product and addition of requested data based on consumer feedback</li> <li>• Maintenance of Social Wellbeing Agency Mahitahi data platform</li> </ul> <p>Access to community level data and improved access to data were consistent themes of the iwi-Māori engagement.</p>
<b>Current state</b>	<p>There is limited availability of data on community wellbeing. Improved availability and standards are needed for community level data. Most government data is focused at a national level and all surveys are too small to provide robust data below the regional level. This is further exacerbated when disaggregated by other characteristics, like ethnicity.</p>
<b>Opportunity</b>	<p>If community wellbeing is understood, then we can begin to understand the drivers and put strategies in place to improve population wellbeing. This would enhance social outcomes and reduce the strain on related services like health.</p>
<b>Status</b>	<p>The Social Wellbeing Agency has work underway to help quantify the wellbeing of communities around the country.</p>
<b>Key interdependencies</b>	<p>The investment opportunities, <i>Additional registers &amp; accompanying foundational data</i>, <i>Standardised system-wide data governance</i>, <i>Standardised data rules &amp; aggregation</i> are seen as interdependencies to this investment.</p>
<b>Responsible agencies</b>	<p>Social Wellbeing Agency.</p>
<b>Contributing agencies</b>	<p>Ministry for Pacific Peoples.</p>

## Populations of Policy Interest dimension

### Further opportunities

Additional measures for family and whānau wellbeing.	Improved measurement of migrants and their outcomes.
Improved measurement of marginalised groups and their outcomes.	Improved measurement of refugees and their outcomes.
Improved data on carers.	Improved measurement of the wellbeing of Pacific groups, including data that reflect Pacifica perspectives.
Improved measurement of people with functional limitations that give rise to disability, including learning disability, disability arising from anxiety, depression, fatigue and pain, and possible socio-cultural measures of disability.	More granular age data for those aged over 65, including those in non-private households.



## Data integration assets dimension

### Strengthened Integrated Data Service

<b>Description</b>	<p>This opportunity is a vital part of our work on building better insights across the data system.</p> <p>It allows the Integrated Data Infrastructure (IDI) to continue to deliver data on individuals, households, and via the Longitudinal Business Database (LBD) data on businesses, to obtain insights into (for example) education, employment, earnings, and the pre-cursors of child poverty.</p> <p>It will ensure that the infrastructure is in place to enable expected use of the IDI across an increasingly diverse range of users, including iwi-Māori.</p> <p>One example is contributing to understanding homelessness in sub-populations.</p> <p>Engagement with iwi-Māori produced strong support for this investment opportunity among those who were already aware of the IDI and were using it. The need to include better data for iwi-Māori use in the IDI and for improved access to the IDI were highlighted. Improved access to data was a consistent theme of the engagement.</p>
<b>Current state</b>	<p>The Integrated Data Service (IDS) delivers microdata about people and households via the Integrated Data Infrastructure (IDI) and data about businesses via the Longitudinal Business Database (LBD). The IDI includes data about life events – such as, education, income, benefits, migration, justice, and health from administrative and survey sources which is linked together.</p> <p>However, administrative data often does not meet expectations around data quality for some of the downstream uses and improving the quality carries costs for agencies that provide it.</p> <p>The IDI has grown considerably in the last seven years, supporting over 700 customers working on around 300 different projects, and receives about 100 new project applications each calendar year. The use of the IDI is evolving and increasingly being used to solve real-time problems (e.g., assess wage subsidy effectiveness during COVID) rather than being limited to research.</p> <p>The IDI is also of increasing interest to iwi-Māori, both in terms of data sovereignty and in developing specific insights pertaining to iwi-Māori.</p>
<b>Opportunity</b>	<p>The IDS is integral to work across the system, but there is more value that could be gained by increasing the service offering for government users, expanding the customer base, looking to partner to provide more direct impact for communities across New Zealand, and work more closely with Treaty partners to enable achievement of their data aspirations.</p> <p>There is also an opportunity to improve data quality (consistent data and metadata) so that the IDI becomes more widely usable. This opportunity is an iwi-Māori priority.</p>
<b>Status</b>	<p>There is an ongoing programme of change delivered by Stats NZ as part of business-as-usual delivery of the Integrated Data Service. However, the scale of this work is currently limited to enhancement rather than transformational work.</p> <p>In addition, two initiatives have been prioritised and funded through a combination of the Digital Innovation Fund and club-funding from agencies:</p> <ol style="list-style-type: none"> <li>1. Data Lab Commons – this initiative seeks to improve collaboration within the Data Lab by developing a web forum where users can ask and answer questions.</li> <li>2. Code Modules – this initiative is looking to include user-written code in IDI processes, which can create consistent populations of policy interest, saving time for users. This collaboration with users to embed their code into internal processes is ground-breaking and is addressing one of the most significant challenges that users of the IDI face: the ability to check that they are using the right data in the right way to answer the right questions and enabling consistency with other data users.</li> </ol>

## Data integration assets dimension

### Strengthened Integrated Data Service (continued)

<b>Key interdependencies</b>	<p>This investment opportunity is related to the following investment opportunities:</p> <ul style="list-style-type: none"> <li>• <i>improving the visibility of populations of policy interest</i> – which includes improving the systems and collection processes in agencies that supply important administrative datasets to both increase the quality of the data and metadata they provide. This is a related opportunity that will act to enhance the quality of the data available but is not a specific dependency</li> <li>• <i>improved availability and standards for community level data</i> – which aims to provide data and insights to communities in a manner they can use. There is an outgoing dependency from this initiative to providing community level data as the IDI is a key source.</li> </ul> <p>Without improvements in the IDI, particularly related to providing higher frequency data updates, the community level data initiative may need to go directly to the original source data which would add significant cost and time to that proposal.</p>
<b>Responsible agencies</b>	<p>Stats NZ.</p>
<b>Contributing agencies</b>	<p>Ministry of Education.          Ministry of Justice.          Social Wellbeing Agency.          Ministry of Business Innovation and Employment.          Inland Revenue.          Productivity Commission.          University of Auckland.          Auckland University of Technology.          Toitū Te Whenua (Land Information NZ).          Ministry for the Environment.          Ministry for Primary Industries.          Ministry for Women.</p>

## Data integration assets dimension

### Statistical registers and foundational data

<p><b>Description</b></p>	<p>This investment opportunity aims to establish a set of integrated statistical registers to act as a mechanism to link other registers, datasets, and survey data safely in an all of Government system.</p> <p>It will contribute to the Government priorities on:</p> <ul style="list-style-type: none"> <li>• <i>building the economy</i> by providing more accurate and timely data about the size and characteristics of firms (activities) and people (occupations) involved in digital activities. This would allow the digital economy to be visible in existing data. A linked register system would allow the integration of existing data across government to produce new insights into the digital economy with minimal need for new data collection</li> <li>• this would also allow linkage of other investment opportunities (e.g., Māori businesses within the digital economy)</li> <li>• <i>improving health &amp; housing outcomes for New Zealanders</i> by providing more accurate and frequent measures of populations and dwellings and their circumstances (e.g., linking to other administrative data to identify which houses are not occupied). Registers may replace the need to include a count of dwellings in the 5 yearly census</li> <li>• <i>improving children's wellbeing and reducing inequality</i> by providing more granular data on the circumstances of individuals and households (e.g., the level of income received in each household). This will free up household surveys to ask contextual questions around why and how people arrived at a certain state.</li> </ul> <p><b>Specific initiatives</b></p> <ul style="list-style-type: none"> <li>• Creation of a Statistical Person Register</li> <li>• Enhancements to Statistical Business Register, Statistical Location Register and Property Register</li> <li>• End-to-end solution design and architecture for the integrated statistical registers</li> <li>• Improved sourcing and ingesting of data that results in better and new data insights</li> </ul> <p>Common themes from the iwi-Māori engagement were the increased need to access government data by Māori and Māori data sovereignty of data already held about Māori. This investment opportunity was not seen as important to meeting the access issue and was seen as possibly conflicting with Māori Data Sovereignty.</p>
<p><b>Current state</b></p>	<p>A register lists all members of a defined population. It is the sole authoritative source of that information, kept complete, accurate and up to date. For example, the companies register administered by the Companies Office is the single, authoritative data source for company information. Key features of a register are persistent unique identifiers, immutable entries, and live data. Currently, there is no statistical person register in New Zealand. Additionally, the business, property, address, district valuation rolls and biodiversity registers require further investment. Foundational data such as imagery, LIDAR, rivers, and roads centrelines are needed to underpin other data.</p> <p>Stats NZ has some statistical registers, but these need to be enhanced and a statistical person register created to complete the core set. This will enable the core set of registers to be linked together enabling a greater range of cross-cutting insights to be developed.</p>

## Data integration assets dimension

### Statistical registers and foundational data (continued)

<b>Opportunity</b>	<p>If more registers are established then data will be updated more frequently, will be of higher quality, and more readily linked to other datasets. This will enable more timely and richer insights as well as a focus on populations of interest. The establishment of registers needs to take account of social licence and be supported by sound governance to ensure ongoing public trust and confidence.</p> <p>This opportunity is an iwi-Māori priority.</p> <p>The creation of a core set of statistical registers is critical to delivering existing and new data and statistics more efficiently.</p> <p>A system of integrated registers will allow increased use of administrative data and enable the government data system to get better value out of the data it manages. It will allow data to be updated more frequently.</p> <p>It will also enable the production of richer insights which are increasingly being demanded by our stakeholders.</p>
<b>Status</b>	<p>Work has started on the development of a statistical person register.</p> <p>Together with the statistical business register and statistical location register, these are the fundamental building blocks for an integrated data system.</p>
<b>Key interdependencies</b>	<p>This investment opportunity is fundamental to the achievement of a several opportunities in the Plan, including:</p> <ul style="list-style-type: none"> <li>• <i>a more accurate and frequent measurement of population</i></li> <li>• <i>improved visibility of populations of policy interest.</i></li> </ul>
<b>Responsible agencies</b>	<p>Stats NZ.</p>
<b>Contributing agencies</b>	<p>Toitū Te Whenua (Land Information NZ).          Ministry of Business, Innovation and Employment.          Ministry for the Environment.          Ministry for Primary Industries.          Department of Internal Affairs.</p>



## Data integration assets dimension

### Standardised system-wide data governance

<b>Description</b>	<p>Standardised system-wide data governance will enable the following outcomes:</p> <ul style="list-style-type: none"> <li>• people trust the data they share with government will be collected, managed, and used safely and responsibly</li> <li>• Māori and iwi have the data system they need to fulfil their aspirations</li> <li>• people and organisations have access to efficient, effective government services</li> <li>• government decisions are informed by the right data at the right time</li> <li>• government is held to account through a robust and transparent data system.</li> </ul>
<b>Current state</b>	<p>Data governance is the combination of people, policies, standards, processes, and technology that enables data to be available, usable, consistent, coherent and secure.</p> <p>Although significant guidance exists to support good data governance, currently there is no system governance layer. As a result, each entity makes individual choices and there is divergence in practice.</p>
<b>Opportunity</b>	<p>If consistent data governance is put in place, then data use will become more efficient, reusable and comparable. Governance is also important to ensure that the ways in which data is used are consistent with public expectations.</p> <p>Specific immediate opportunities relate to the establishment of Te Whatu Ora (Health New Zealand) and Te Aka Whai Ora (Māori Health Authority) and a requirement for consistent health data and Māori data across the system.</p>
<b>Status</b>	<p>Current guidance supporting good data governance across the system is sparse and mostly focused on the functions of specific agencies, rather than taking a system-wide view. The need to share and integrate data requires a more joined up approach to ensure efficient and trusted use of government data.</p> <p>The Data and Statistics Act 2022 recognises and strengthens the role of the Government Statistician in leading the data and statistics system, with a focus on data for statistics and research.</p> <p>The establishment of System Leader roles under the Public Service Act 2020 provides an opportunity to address system data governance issues. The Public Service Commissioner has signalled his intention to designate the Chief Executive of Stats NZ as System Leader for Data and the Government Chief Data Steward (GCDS) will report back on a revised mandate.</p> <p>The revised mandate will cover, among other things, setting system-wide tools to better foster trusted and ethical use of data and the issuing of mandatory data standards and common data capabilities on how to collect, manage and use data.</p> <p>When the GCDS mandate has been clarified, along with those of the other data-related System leads (e.g., Digital and Information Security), investment needed to support the revised mandate will be identified. This will provide a context for considering co-governance of iwi-Māori data. Some initial work on Māori data governance is being progressed as part of the Mana Ōrite Relationship Agreement.</p>
<b>Key interdependencies</b>	<p>This investment opportunity is related to the <i>Māori data governance</i> opportunity.</p>
<b>Responsible agencies</b>	<p>Stats NZ.</p>
<b>Contributing agencies</b>	<p>All especially Ministry of Health. Te Whatu Ora (Health New Zealand) tbc. Te Aka Whai Ora (Māori Health Authority) tbc.</p>

## Data integration assets dimension

### Standard data rules and aggregations

<b>Description</b>	<p>This investment opportunity is foundational to the success of the government data system.</p> <p>To maximise the potential of data held within administrative and survey data systems, data standards need to be implemented consistently across government.</p> <p>This is needed to aid the integration of data as common standards for data items allow different systems to “talk” to each other. This will enable greater efficiency in the use of data collection across government (i.e., collect once, use multiple times) and provide greater understanding and insights on targeted groups and populations of policy interest (e.g., understanding the welfare, education, and housing needs of recent immigrants).</p> <p><b>Specific initiatives</b></p> <p>Progression of standards on:</p> <ul style="list-style-type: none"> <li>• ethnicity</li> <li>• iwi affiliation</li> <li>• Māori descent</li> <li>• Māori business.</li> </ul> <p>Work is progressing on introducing mandated standards into government data systems and collections.</p> <p>This investment opportunity will be further scoped in years 4-7.</p>
<b>Current state</b>	<p>Existing data standards are not being implemented consistently across government.</p> <p>A lack of consistent business rules, data formats and levels of aggregation mean that data sets cannot be easily combined for cross-agency data sharing.</p> <p>For example, many regions are developing their own collections, without the use of data standards.</p>
<b>Opportunity</b>	<p>If data is standardised, more value can be obtained from it. Wider adoption of data standards will enable agencies to use data collected by other organisations and in different regions to develop meaningful insights and conclusions.</p> <p>This opportunity is an iwi-Māori priority.</p>
<b>Status</b>	<p>Stats NZ has an on-going programme of developing and maintaining standards to allow data to be captured and aggregated accurately and consistently. The GCDS actively promotes the use of these standards across the data system. This existing work will contribute to the delivery of this investment opportunity.</p>
<b>Key interdependencies</b>	<p>Several investment opportunities are dependent on this opportunity including:</p> <ul style="list-style-type: none"> <li>• <i>statistical registers and foundational data</i></li> <li>• <i>enhanced visibility of populations of policy interest in data</i></li> <li>• <i>centralised primary health care data.</i></li> </ul>
<b>Responsible agencies</b>	<p>Stats NZ.</p>
<b>Contributing agencies</b>	<p>All administrative and statistical systems require this change.</p>

## Data integration assets dimension

### Further opportunities

Additional prioritised investment opportunities for the data integration dimension are listed below.

Improved standardisation of metadata across collections.

New tools to address emerging issues.



## Appendix Four – Alignment of opportunities to the Treasury’s Living Standards Framework (LSF)

LSF Categories	Prioritised gaps
<b>Individual and collective wellbeing</b>	
Subjective wellbeing	
Health	<ul style="list-style-type: none"> <li>• Centralised Primary Health Care data</li> <li>• Improved mental health and addiction data.</li> </ul>
Knowledge and skills	
Work, care and volunteering	<ul style="list-style-type: none"> <li>• More frequent data on unpaid and voluntary work</li> <li>• Detailed occupational data and visibility of pay gaps for populations of interest.</li> </ul>
Cultural capability and belonging	<ul style="list-style-type: none"> <li>• New te ao Māori measures of wellbeing</li> <li>• Consistent measurement of ethnicity across government.</li> </ul>
Family and friends	<ul style="list-style-type: none"> <li>• New measures for family and whanau wellbeing.</li> </ul>
Leisure and play	
Housing	<ul style="list-style-type: none"> <li>• Granular housing affordability and homelessness measurement.</li> </ul>
Engagement and voice	<ul style="list-style-type: none"> <li>• Enhanced visibility of populations of policy interest.</li> </ul>
Safety	<ul style="list-style-type: none"> <li>• Sustainable and enhanced data on victims of crime.</li> </ul>
Income, consumption and wealth	<ul style="list-style-type: none"> <li>• Improved insights on child poverty and energy hardship.</li> </ul>
Environmental amenity	<ul style="list-style-type: none"> <li>• New conceptual and measurement framework for ecosystem service</li> <li>• Improved data on waste</li> <li>• Centralised and enhanced data on impacts of natural disasters.</li> </ul>

LSF Categories	Prioritised gaps
<b>Individual and collective wellbeing</b>	
Whānau, hapu and iwi	<ul style="list-style-type: none"> <li>• New te ao Māori measures of wellbeing.</li> </ul>
Families and households	<ul style="list-style-type: none"> <li>• New measures for family and whanau wellbeing.</li> </ul>
Civil society	<ul style="list-style-type: none"> <li>• More frequent data on unpaid and voluntary work.</li> </ul>
Firms and markets	<ul style="list-style-type: none"> <li>• Clearly defined Māori businesses</li> <li>• Additional data on wellbeing of business owners.</li> </ul>
Central and local government	
International connections	
<b>Wealth of Aotearoa New Zealand</b>	
Social capital	
Human capital	
Natural capital	<ul style="list-style-type: none"> <li>• Enhanced and standardised climate change data</li> <li>• Nationally consistent measurement of land use</li> <li>• Improved water quality data</li> <li>• Improved data on aquifer health and groundwater extraction.</li> </ul>
Financial and Physical capital	<ul style="list-style-type: none"> <li>• Additional satellite accounts for tourism, health, and labour.</li> </ul>
No equivalent category in LSF	<ul style="list-style-type: none"> <li>• Improved data on the wellbeing of children</li> <li>• Improved community level data</li> <li>• New conceptual and measurement framework for equity</li> <li>• More accurate and frequent measurement of population</li> <li>• Standardised data rules and aggregations</li> <li>• Additional registers and foundational data</li> <li>• Standardised system-wide data governance</li> <li>• Strengthened Integrated Data Service</li> <li>• Clearly defined Māori businesses</li> <li>• New data to measure the value of the digital economy</li> <li>• Māori data governance</li> <li>• Māori data infrastructure</li> <li>• Māori data capacity and capability.</li> </ul>

## Appendix Five – Indicative delivery roadmap

The top 33 investment opportunities contain opportunities that are already in train, those that are expected to result in a Budget bid in the next three years, and new initiatives that will require substantial development before they are investment ready. Some opportunities have dependencies on other programmes across government which means they can't be implemented at this time; others are subject to delivery constraints.

Prioritisation data and implementation considerations have been combined to form a blueprint for delivery in the next three years and an indicative roadmap for the next 10 years.

The blueprint and roadmap will be refined and validated each year and presented with each iteration of the Plan.

Completion window			
Pillar/Dimension	Years 1-3	Years 4-7	Years 8-10
<b>Economy</b>	<ul style="list-style-type: none"> <li>Improved insights on energy hardship and child poverty (MBIE, Stats NZ)</li> <li>Clearly defined Māori businesses (Stats NZ)</li> <li>New data to define and measure the size and value of the digital economy (Stats NZ, MBIE)</li> <li>Granular data on housing affordability and homelessness (HUD).</li> </ul>	<ul style="list-style-type: none"> <li>Updated occupation definitions and visibility of pay gaps for populations of interest (Stats NZ, PSC, MBIE).</li> </ul>	<ul style="list-style-type: none"> <li>Additional data on wellbeing of business owners (MBIE)</li> <li>Additional satellite accounts for tourism, health and labour (Stats NZ).</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>Nationally consistent measurement of land use (MfE, MPI)</li> <li>Enhanced and standardised climate change data (MfE, MPI).</li> </ul>	<ul style="list-style-type: none"> <li>Improved data on waste (MfE, MBIE)</li> <li>Improved data on water quality (MfE)</li> <li>Improved data on data on aquifer health and groundwater abstraction (MfE).</li> </ul>	<ul style="list-style-type: none"> <li>Centralised and enhanced data on the impact of natural disasters (MfE, MBIE)</li> <li>New conceptual and measurement framework for ecosystem services (MfE, DoC).</li> </ul>
<b>Society</b>	<ul style="list-style-type: none"> <li>More accurate and frequent measurement of population (Stats NZ)</li> <li>Sustainable and enhanced data on victims of crime (MoJ)</li> <li>Consistent measurement of ethnicity (Stats NZ)</li> <li>Centralised primary health care data (MoH)</li> <li>Improved data on mental health (MoH).</li> </ul>	<ul style="list-style-type: none"> <li>More frequent data on unpaid and voluntary work (Stats NZ).</li> </ul>	<ul style="list-style-type: none"> <li>New conceptual and measurement framework for equity (MSD, SWA, MoE, MoH, MoJ, MBIE, TPK)</li> <li>New measures for family and whānau wellbeing (Stats NZ, TPK, MSD, SWA).</li> </ul>

Completion window			
Pillar/Dimension	Years 1-3	Years 4-7	Years 8-10
<b>Populations of Policy Interest</b>	<ul style="list-style-type: none"> <li>Improved data on the wellbeing of children (SWA, Stats NZ, DPMC, TPK)</li> <li>Improved community level data (SWA).</li> </ul>		<ul style="list-style-type: none"> <li>Additional data integrations to enhance visibility of populations policy interest (Stats NZ).</li> </ul>
<b>Data Integration</b>	<ul style="list-style-type: none"> <li>Strengthened integrated data (Stats NZ)</li> <li>Additional registers and foundational data (Stats NZ).</li> </ul>	<ul style="list-style-type: none"> <li>Standardised system-wide data governance (Stats NZ).</li> </ul>	<ul style="list-style-type: none"> <li>Standardised data rules and aggregations (Stats NZ).</li> </ul>
<b>iwi-Māori data needs and aspirations</b>	<ul style="list-style-type: none"> <li>Māori data governance (Stats NZ)</li> <li>Māori data capacity and capability (Stats NZ)</li> <li>Māori data infrastructure (Stats NZ)</li> <li>New te ao Māori measures of wellbeing (TPK).</li> </ul>		



## Appendix Six – Blueprint diagram

# Data Investment Plan Blueprint

## Delivering priority data assets



### Priority data assets: 2022–2025

Granular data on housing affordability and homelessness, and improved insights on energy hardship (HUD/MBIE)
New te ao Māori measures of wellbeing (TPK)
Sustainable and enhanced data on victims of crime (MoJ)



Improved data on the wellbeing of children and young people (DPMC)
Improved insights on child poverty (Stats NZ)
Data on mental health and addiction (Te Whatu Ora – Health New Zealand)
Centralised primary health care data (Te Whatu Ora – Health New Zealand)

Improved community level data (SWA)
Māori data governance (Stats NZ)
Statistical Registers (LINZ/Stats NZ)



Strengthened integrated data (Stats NZ)
Māori data infrastructure (Stats NZ)

Māori data capacity & capability (Stats NZ)
More accurate measures of populations of policy interest (Stats NZ)
Consistent measurement of ethnicity (Stats NZ)



Enhanced and standardised climate change data (MfE, MPI)
Nationally consistent measurement of land use (MfE, MPI)
New data to measure the value of the digital economy (MBIE/Stats NZ)
Data on Māori business (Stats NZ)





DATA INVESTMENT PLAN BLUEPRINT DELIVERING PRIORITY DATA ASSETS

	2022/23 – underway	2023/24	2024/25	
<p>Individual and collective wellbeing</p>	New te ao Māori measures of wellbeing (TPK)	<ul style="list-style-type: none"> <li>Develop suite of measures and indicators based on the He Ara Waiora framework</li> </ul>	<ul style="list-style-type: none"> <li>Develop future work programme based on identified data and statistical gaps</li> </ul>	
	Granular data on housing affordability and homelessness (HUD/MBIE)	<ul style="list-style-type: none"> <li>New products to make more data and evidence on housing affordability and homelessness available – including incorporating a te ao Maori lens</li> <li>Additional breakdowns of existing data sources</li> <li>Finalised energy hardship framework</li> </ul>	<ul style="list-style-type: none"> <li>Severe housing deprivation estimates for census years with additional granularity</li> <li>Implement framework to measure energy hardship</li> </ul>	→
	Improved insights on energy hardship and child poverty (Stats NZ)	<ul style="list-style-type: none"> <li>Stats NZ implement new longitudinal household survey of income and housing costs</li> </ul>	<ul style="list-style-type: none"> <li>Investigate further enhancements to child poverty measures</li> </ul>	→
	Improved data on the wellbeing of children and young people (DPMC)	<ul style="list-style-type: none"> <li>Continued use of existing data assets including the youth health and wellbeing survey (<i>What about me?</i>)</li> </ul>	<ul style="list-style-type: none"> <li>Establish and implement a cross-agency data strategy for improving the scope, timeliness, and granularity of child and youth wellbeing measurement across new and existing data collections</li> </ul>	→
	Centralised Primary Health Care data (Te Whatu Ora – Health New Zealand)	Detailed work programme to be determined as the new Health Agency becomes operational		
	Sustainable and enhanced data on victims of crime (MoJ)	<ul style="list-style-type: none"> <li>Expand the delivery of, and research into, the New Zealand Crime and Victims Survey</li> </ul>		→
	Data on mental health and addiction (Te Whatu Ora – Health New Zealand)			<ul style="list-style-type: none"> <li>Scoping work underway</li> </ul>
<p>Institutions and governance</p>	Improved community level data (SWA)	<ul style="list-style-type: none"> <li>Development of draft database of key indicators sourced from the IDI</li> </ul>	<ul style="list-style-type: none"> <li>Data available via SWA/TPK Mahitahi platform</li> <li>Secure platform for storage &amp; supply of community data</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing development of additional indicators</li> </ul>
	Strengthened integrated data (Stats NZ)	<ul style="list-style-type: none"> <li>Strengthen the Integrated Data Service to improve its reliability and capacity to meet cross-system needs, and make it easier to access insights from integrated data</li> </ul>	<ul style="list-style-type: none"> <li>Continue work on a more user-friendly, reliable, and rapid Integrated Data Service service for customers</li> </ul>	→
	Māori data governance (Stats NZ)	<ul style="list-style-type: none"> <li>Cabinet paper on policy work programme</li> <li>Ongoing engagement with the Data Iwi Leaders Group</li> </ul>	<ul style="list-style-type: none"> <li>Commence scoping of initiatives within work programme</li> </ul>	
	Māori data infrastructure (Stats NZ)	<ul style="list-style-type: none"> <li>Cabinet paper on policy work programme</li> <li>Ongoing engagement with the Data Iwi Leaders Group</li> </ul>	<ul style="list-style-type: none"> <li>Commence scoping of initiatives within work programme</li> </ul>	
	Statistical registers (LINZ/Stats NZ)	<ul style="list-style-type: none"> <li>Development of statistical person and property registers to support production of more detailed and accurate population, environmental and economic statistics</li> </ul>	<ul style="list-style-type: none"> <li>Work on statistical registers, internal architecture and integration</li> </ul>	<ul style="list-style-type: none"> <li>Enhancement to statistical person register &amp; location register to enable integration</li> </ul>



DATA INVESTMENT PLAN BLUEPRINT DELIVERING PRIORITY DATA ASSETS



	2022/23 – underway	2023/24	2024/25
Māori data capacity & capability (Stats NZ)	<ul style="list-style-type: none"> <li>• Mahi tahi (working together) on data initiatives and projects defined by iwi</li> </ul>		
More accurate and frequent measures of populations of policy interest (Stats NZ)	<ul style="list-style-type: none"> <li>• Continue research &amp; development into methods to improve the measurement of populations of policy interest e.g. disabled people, Pacific Peoples</li> </ul>		<ul style="list-style-type: none"> <li>• Options for future of social &amp; population statistics</li> </ul>
Enhanced and standardised climate change data (MfE, MPI)	<ul style="list-style-type: none"> <li>• Greenhouse gas accounting, observational and projections data, to assist in undertaking an areas-of-impact analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Integration of observational and emissions data to help identify adaptation and mitigation strategies</li> </ul>	
Consistent measurement of ethnicity (Stats NZ)	<ul style="list-style-type: none"> <li>• A review of the existing ethnicity classification and introduction of a mandated data standard to ensure consistency across government</li> </ul>	<ul style="list-style-type: none"> <li>• Individual agencies change their systems to implement the new ethnicity standard</li> </ul>	
Nationally consistent measurement of land use (MfE, MPI)	<ul style="list-style-type: none"> <li>• Requirements analysis based on existing and upcoming legislation</li> <li>• Undertake discovery of existing information (data and systems) available</li> </ul>	<ul style="list-style-type: none"> <li>• Development of nationally consistent and agreed methodology, definitions and a hierarchy to enable data at different spatial resolutions to be aggregated</li> </ul>	<ul style="list-style-type: none"> <li>• Scope requirements for operationalizing system to provide regular updates</li> </ul>
New data to measure the value of the digital economy (MBIE/Stats NZ)	<ul style="list-style-type: none"> <li>• Establish export, revenue and employment measures to support Digital Strategy Aotearoa</li> </ul>	<ul style="list-style-type: none"> <li>• Progress design work on scope &amp; coverage of the digital economy &amp; align frameworks with international standards</li> </ul>	
Improved measurement of Māori businesses (Stats NZ)	<ul style="list-style-type: none"> <li>• Establish an agreed definition of Māori business</li> </ul>	<ul style="list-style-type: none"> <li>• Update the New Zealand Business Number to enable the identification of Māori businesses</li> </ul>	<ul style="list-style-type: none"> <li>• Apply the new definition within the Statistical Business Register</li> </ul>

Key

Blueprint deliverables already funded or implemented within baseline are set out within a white box with no flag. Where new funding is required, the following key applies:

The highest priority opportunities which need prompt action from the system

Opportunities where the system needs to build core foundations in order to ensure delivery, scalability, and sustainability into the future

< 1m

1–3m

4–6m

7–10m

>10m

## Appendix Seven – Agency Membership of Working Group

The following agencies participated in the cross agency working group:

- Accident Compensation Corporation (ACC)
- Department of Conservation (DOC)
- Department of Internal Affairs (DIA)
- Department of the Prime Minister and Cabinet (DPMC)
- Government Communications Security Bureau (GCSB)
- Inland Revenue (IR)
- Mental Health & Wellbeing Commission
- Ministry for Ethnic Communities (MEC)
- Ministry for Pacific Peoples (MPP)
- Ministry for Primary Industries (MPI)
- Ministry for the Environment (MfE)
- Ministry for Women (MfW)
- Ministry of Business, Innovation & Employment (MBIE)
- Ministry of Education (MoE)
- Ministry of Foreign Affairs & Trade (MFAT)
- Ministry of Health (MoH)
- Ministry of Housing & Urban Development (HUD)
- Ministry of Justice (MoJ)
- Ministry of Social Development (MSD)
- Ministry of Transport (MoT)
- NZ Defence Force (NZDF)
- NZ Police
- NZ Transport Agency (NZTA)
- Oranga Tamariki (OT)
- Public Service Commission (PSC)
- Reserve Bank of NZ (RBNZ)
- Social Wellbeing Agency (SWA)
- Stats NZ
- Te Arawhiti
- Toitū Te Whenua (LINZ)
- Te Puni Kōkiri (TPK)
- The Treasury
- Waikaha





**Te Kāwanatanga o Aotearoa**  
New Zealand Government

