TE MANATŪ WAKA
MINISTRY OF TRANSPORT

An evaluation of modal shift in the Government Policy Statement (GPS) on land transport

He Arotake i te neke i te Tauāki Tikanga Here Kāwanatanga mō te waka whenua (GPS)

February 2023

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For More Information

For more information about this project and the associated report, please contact: evaluation@transport.govt.nz

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Research, Economics and Evaluation

The Research, Economics and Evaluation team operates within the System Performance and Governance Group of the Ministry of Transport. The team supports the Ministry's policy teams by providing the evidence base at each policy development stage.

The team is responsible for:

- Providing sector direction on establishing and using the Transport Evidence Base (see below) – including the collection, use and sharing of data, research and analytics across the transport sector and fostering the development of sector research capabilities and ideas.

- Leading and undertaking economic analysis, appraisals and assessments, including providing economic input on business cases and funding requests.

- Providing the evaluation function for the Ministry, including designing monitoring and evaluation frameworks and approaches, developing performance metrics and indicators, and designing, conducting and procuring evaluations.

The Transport Evidence Base

The Transport Evidence Base Strategy creates an environment to ensure data, information, research and evaluation play a key role in shaping the policy landscape. Good, evidence based decisions also enhance the delivery of services provided by the public and private sectors to support the delivery of transport outcomes and improve wellbeing and liveability in New Zealand.

This report is listed on the 2021-23 Evaluation Programme, which forms part of the Transport Evidence Base implementation plan.

Acknowledgements

We want to thank the following agencies and people for their input and assistance in this project and in preparing this report.

The report was presented by Vivienne Ivory, Daniel Cooper and Louise Malcolm of WSP.

The following organisations contributed to workshops, interviews and data gathering:

- Waka Kotahi the NZ Transport Agency
- Te Manatū Waka the Ministry of Transport
- Auckland Transport
- Greater Wellington Regional Council
- Wellington City Council
- Kaipara District Council
- Otago Regional Council
- WSP

Glossary of terms and abbreviations

GPS	Government Policy Statement on land transport
IPM	Investment Prioritisation Method (assessment framework)
LCLR	Low Cost, Low Risk (funding category)
NLTF	National Land Transport Fund
NLTP	National Land Transport Programme
RAMM	Road Assessment and Maintenance Management
RLTP	Regional Land Transport Plan
SUM	Sustainable Urban Mobility Benchmarking
TIO	Transport Investment Online
VfM	Value for Money (assessment framework)
VKT	Vehicle kilometres travelled

Executive Summary

Abstract

This study evaluated the interpretation and implementation of mode shift signals in the 2018 Government Policy Statement on Land Transport (GPS).

Analysis of 2015, 2018, and 2021 Transport Investment Online (TIO) data and in-depth interviews with transport practitioners showed that while the trend is towards funding more mode shift activities through the National Land Transport Plan (NLTP), it is a gradual shift over time.

Recommendations address the relatively small margins for change given committed funds, limited capacity within the sector and council budgets, and challenges planning and funding the kinds of complex, network-based changes needed to bring about mode shift.

About the study

The GPS outlines the Government's strategy to guide transport investment through the National Land Transport Fund (NLTF). GPS 2018 signalled a shift in funding priorities to emphasise activities supporting mode shift, such as walking, cycling, and public transport.

This study evaluated the impact of mode shift changes signalled in GPS 2018. The primary focus was on the GPS and NLTF while recognising that other policies, investments, and factors also influenced mode shift. We evaluated how mode shift signals were interpreted and implemented at national, local, and regional decision-making levels. The aim was to improve our understanding of how the GPS supports mode shift and improvements to enhance future iterations of the GPS.

Guided by an evaluation framework, our methodological approach involved analysing quantitative and qualitative data. The framework was informed by orientation workshop insights where the current context for implementing the GPS was discussed with stakeholders from Te Manatū Waka, Waka Kotahi, and local authorities. The evaluation framework included three stages in the process to observe changes supporting mode shift (what is a priority, what gets funded, and what gets monitored) across national, regional, and local decision-making scales for the three GPS periods – 2015, 2018, and 2021.

Existing data and indicators from various sources were gathered and assessed to populate the framework. Sources included mode shift-related transport indicators from Te Manatū Waka, NLTF data from Waka Kotahi's TIO platform, and strategy and planning documents. Indicators were categorised by maturity based on their availability at the relevant decision-making and temporal scales. Additional insights on the interpretation and implementation of GPS mode shift investment signals were gained through semi-structured interviews with stakeholders from Waka Kotahi and regional and local councils (urban and rural).

Data from the TIO platform was analysed to determine the impact of GPS 2018 on transport investment. We observed changes over time in the number of mode shift-promoting activities forwarded to the NLTF and their funding in the National Land Transport Plan (NLTP). Information on activities from three GPS periods (2015, 2018, and 2021) was extracted for seven regions and categorised into mode shift-promoting, roading or other. A simple weighting process was applied to the categories to account for mode shift investment in roading activities (a more nuanced weighting

approach would better account for under- and over- counting mode shift activities). Data was then compared across the three GPS periods (data limitations precluded more detailed regional analyses).

What we found

- Indicators of mode shift outcomes (e.g., number of people travelling by travel mode) were generally readily available, but it takes longer to see any change in outcomes, and it is difficult to attribute any change to the GPS (compared to other factors). The activities included and funded through the NLTP demonstrate changes in priorities and can provide an early indication of the degree of GPS influence.

- While a wide range of indicators and data sources were identified to populate the evaluation framework, the maturity of indicators varied considerably. Many were not available at the necessary spatial and temporal scales required to evaluate the impact of GPS 2018 on mode shift fully.

- The GPS 2018 was seen as a significant departure from previous iterations. While mode shift activities are often funded through local road activity classes, the GPS 2018 change in direction expanded the range of possible mode shift projects. However, committed projects left little margin for change, and other priorities, capacity, and local funding limitations within local authorities constrained mode shift investment opportunities.

- The results from the regional breakdown reinforce the gradual shift towards mode shift-promoting activities. Most regions have seen a drop in the percentage of roading activities and an increase in the percentage of active and public transport activities compared to 2015 (see Fig 1). However, the results also highlight how different regions are at different stages of their mode shift journey. They provide insights for the regions to look at patterns over time and provide prompts to review activities when unexpected events occur.

What we recommend

Using the Value for Money (VfM) assessment model, the following recommendations are provided for the development of GPS 2024 and associated reporting:

- Understand and prioritise the underlying determinants and mechanisms of mode shift that can be addressed through transport funding.

- Increase the visibility of modal information in the investment process and operation and management of the transport system.

- Consider where the appropriate balance lies between the evidence-based business case and strategic approaches so that there is sufficient flexibility in priorities to facilitate funding a diverse range of mode-shift activities.

- Support a higher-level focus on investment, strategic planning and monitoring across activities and organisations and over longer periods (e.g., coordinating with other drivers of mode shift such as changes in land use).

- Greater strategic alignment between transport funds to enable more targeted investment can increase the mode-shift benefits from NLTF investment and reduce potential converse impacts. Accommodate greater coordination and alignment with current changes in land use priorities and policies.

- Recognise and value the accessibility benefits of mode-shift in regional and provincial settings, alongside the emissions and congestion reduction benefits in urban areas.
- Improve the ability to monitor progress towards mode shift within the transport investment and operations system and respond to opportunities to optimise mode shift within the existing network. Investment evaluations need to account for the time lag between investment and construction and use and include measures of inputs and outputs.
- Consider how decision-making about transport investment can better reflect the integrated transport and land use approach and technical skills required for change.

Figure 1. Comparing regional variation in the percentage of activities and percentage of cost by weighted category
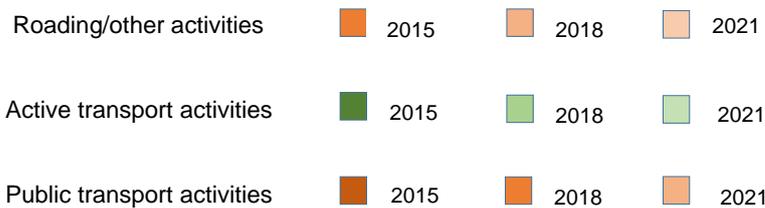
- The TIO data analysis complemented the interview findings. While the trend is towards more mode shift activities, it is a gradual shift over time.
- Many NLTP investment activities support multiple modes, but this is not visible using the TIO activity class categories alone. Noticeable differences were seen when comparing the manually categorised activities with the TIO activity class categories.

Next steps

Assessing the impact of the GPS on mode shift outcomes (such as changes in public transport and cycling behaviours, and private vehicle traffic) will not be possible until the projects invested in since 2018 have been built and are 'bedded in' with communities. However, evaluating the key points on the pathway between the GPS and mode shift identified in this report will provide insights on how the GPS can ultimately influence mode shift outcomes over time.

It will also provide information on how long it takes for the GPS to take effect, considering the planning, investment, design and construction, and behaviour change lag.

Taking advantage of improved capacity to monitor activities through TIO and enabling better monitoring and benchmarking of all modes within the network would allow for better evaluation of the effectiveness and efficiency of changes to the transport system, ultimately feeding back into improved investment decision-making.

Working with stakeholders will be critical to identify the readily available and high effort – high value indicators needed to monitor outcomes and the prioritising and funding steps along the path to mode shift.

1. Introduction

The Government Policy Statement on land transport (GPS) outlines the government strategy to guide land transport investment over the next ten years, including guiding how money from the National Land Transport Fund (NLTF) will be invested. The 2018 release of the GPS signalled a shift in the prioritisation and allocation of transport funding, with a greater portion of the NLTF allocated for activities supporting mode shift.

Mode shift involves replacing private vehicle travel with more sustainable modes, such as walking, cycling, and public transport (for more details, see here). There are multiple means of achieving mode shift, such as investing in infrastructure and services, managing demand, and integrated transport and land

use planning. Complementary approaches such as triple access planning (physical and spatial proximity and digital connectivity) can also contribute to mode shift. Mode shift has many benefits and contributes to at least three of the five outcomes of the Transport Outcomes Framework (Figure 1): 1) healthy and safe people, 2) environmental sustainability and 3) inclusive access. This is achieved by having fewer vehicles on the road, lowering emissions, and providing greater transport choices. Improving the viability of alternative modes also enhances access by making it easier for people to get where they need to go without a car. Note that mode shift can also refer to moving freight away from a reliance on vehicles but is not considered in this report.

Inclusive access
Enabling all people to participate in society through access to social and economic opportunities, such as work, education, and healthcare.

Healthy and safe people
Protecting people from transport-related injuries and harmful pollution, and making active travel an attractive option.

Economic prosperity
Supporting economic activity via local, regional, and international connections, with efficient movements of people and products.

Environmental sustainability
Transitioning to net zero carbon emissions, and maintaining or improving biodiversity, water quality, and air quality.

A transport system that improves wellbeing and liveability

Resilience and security
Minimising and managing the risks from natural and human-made hazards, anticipating and adapting to emerging threats, and recovering effectively from disruptive events.

Figure 1 Transport Outcomes Framework[1]

Currently, the performance of the GPS is largely assessed through the annual reporting of a set of performance measures that align with its strategic priorities, which may change at each iteration of

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[1]   Reprinted from Ministry of Transport Te Manatū Waka (2018). A framework for shaping our transport system: Transport outcomes and mode neutrality. Retrieved 14 September 2022 from https://transportnz-uat.cwp.govt.nz/assets/Uploads/Paper/Transport-outcomes-framework.pdf.

the GPS (reviewed every three years). For GPS 2018, the strategic priorities were safety, access, environment, and value for money. These priorities form a framework that provides a mechanism to track inputs, outputs, and outcomes annually. However, there is a need to understand more about how the GPS interacts with the transport system, particularly in the mode shift space.

The primary focus of the evaluation is on the GPS and NLTF while recognising that for mode shift, other policies, investments, and factors will be important influences. This evaluation, therefore, seeks to note how the GPS and NLTF interact with them rather than identifying their direct impact on mode shift.

This evaluation report evaluates how the changes in the GPS 2018 relating to mode shift have been interpreted and implemented at national, Regional, and local levels. It aims to improve our understanding of how the GPS supports mode shift and where improvements can be made to enhance future iterations of the GPS in this area.

The key objectives of the evaluation are:

- Assess the impact of the GPS 2018 investment and direction regarding the intended benefits of mode shift (as outlined in the GPS) and inter-related consequences (intended or unintended).
- Consider how the impacts/findings from the GPS 2018 review translate into the implementation of GPS 2021 and the development of GPS 2024 concerning mode shift.
- Engage with stakeholders to ensure their views are reflected in the findings about what was delivered on mode shift in GPS 2018, any relevant issues/findings relating to implementing GPS 2021 and its influence on mode shift, and how GPS 2024 could better provide for mode shift.
- Provide recommendations on how Te Manatū Waka (the Ministry of Transport) and Waka Kotahi (the New Zealand Transport Agency) may improve and supplement existing data collection and management practices relating to monitoring and evaluating mode shift impact.

The methodology was developed around the key purpose of this evaluation — to understand how the GPS 2018 supports mode shift and where improvements can be made to enhance future iterations. The methodology recognises and explores the limits of the available data and the complex pathways between the GPS and mode shift, seeking to advise how best to empirically observe the influence of the GPS and identify critical gaps in knowledge.

Our approach involved analysing quantitative and qualitative data additional to those available for annual reporting. It was divided into five phases as follows:

1   orientation and design
2   data gathering and assessment
3   in depth insights
4   analysis and interpretation
5   recommendations for GPS 2024 and reporting.

The following report presents the five phases of the study, describing how each phase was undertaken and what was found, recommendations, and conclusions.

2. Study Phases

2.1 Orientation and Design – Phase 1

The project's first phase involved establishing a clear understanding of the project requirements, engaging with key stakeholders, and an initial scan of the available data and information. An evaluation framework was developed as part of this phase.

An inception meeting was held with the Te Manatū Waka team, where the details of the project were confirmed as follows:

- project scope (including what was outside the scope)
- milestones and programme delivery
- Technical Advisory Group requirement and composition
- communications approach and quality control processes
- dissemination opportunities (to increase uptake)
- roles and responsibilities
- output shape and focus.

The Orientation and Design steps included the following:

- An initial scan of the GPS 2015, 2018, and 2021 and existing indicators that could be used to track mode shift inputs, outputs, and outcomes[2], allowing us to identify obvious sources, gaps and limitations of the data.
- An orientation workshop attended by key investment and decision–making practitioners from Te Manatū Waka, Waka Kotahi, and local authorities described the current state of play for implementing the GPS.
- An evaluation framework designed to form the project evaluation and reporting basis. This was based on insights from the workshop.
- A review of Te Manatū Waka's Value for Money (VfM) assessment model to determine how best to embed it in the evaluation framework.

The initial scan of the three GPS documents, existing indicators of mode shift, and the orientation workshop led to the development of an initial model to broadly represent a conceptual pathway between the GPS and mode shift (refer to Figure 2).

In the development process, the conceptual pathway was discussed and refined with the workshop attendees.

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[2]   In addition to the GPS annual reporting, identified indicator sources included Census travel statistics, NZ Household Travel Survey, mode share statistics in council reports, Waka Kotahi Storymap outputs, online reports of pedestrian & cycling automatic counters and manual cordon count data, operational funding for walking, cycling, and public transport from council reports.
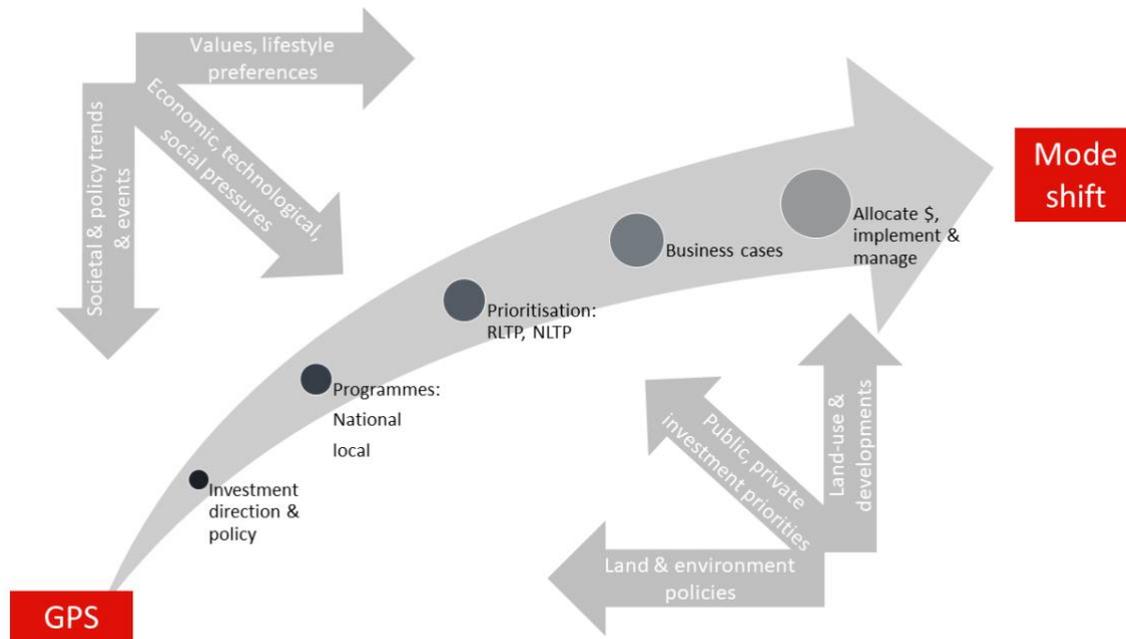
Figure 2 Conceptual model showing the pathway between the GPS and mode shift

In the conceptual model, the process of getting from the GPS to the observable mode shift in the transport system happens in multiple ways and stages. First, the GPS influences a series of decision points, starting with directional investment signals, the development of broad programmes, and the (re)setting of priorities. This influence continues through the business case process, the distribution of funds, and the management of projects for investment and operation of the network.

And this linear process within the transport system, other factors at national, Regional, and local scales also influence what happens. These factors include policies and plans related to land use, such as urban growth areas and the investment priorities of both the public and private sectors. In addition, broader, less tangible societal processes also influence what happens. These include wider societal trends and events (such as political shifts towards wellbeing or pandemics), technological developments (such as shared mobility services), and values and social norms related to mobility (such as perceived status and attitudes towards public transport use). Feedback loops between these factors and decision points are acknowledged but need to be shown in Figure 2 for simplicity.

In addition, rather than being a linear process, the conceptual pathway recognises that the transport system evolves through a continuous cycle of decisions that occur through the prioritisation and investment, design and development (implementation), operation, and optimisation stages. The decision cycle is illustrated in Figure 3, taken from Waka Kotahi's report of the alignment of measuring and monitoring between Waka Kotahi's One Network Framework (ONF, developed with REG – Road Efficiency Group) and the Benefits Framework. Based on this cycle of decision making, several key points were identified where there are opportunities to observe signs of the GPS's influence — investment priorities, funding and implementation, and what is monitored (outcomes and performance and operations).
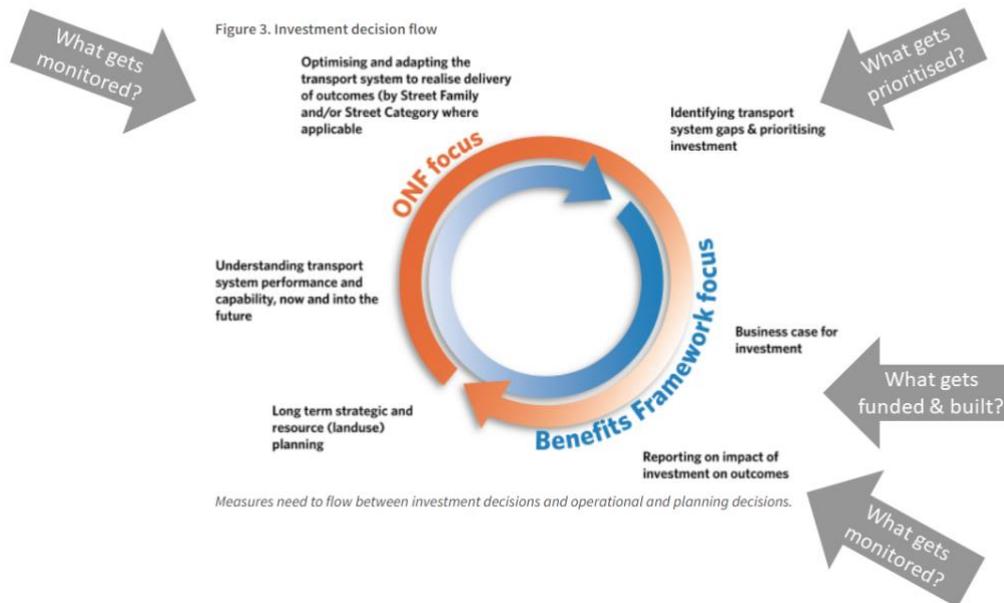
Figure 3 Key decision points in the investment and operational cycle (ONF)[3]

Therefore, the evaluation framework for this project needed to include the "influence opportunity" points, the differing scales of decision making, and the change over time. Decisions about prioritisation, funding and monitoring are made at national, regional, and local scales. If the GPS had an influence, we would expect to see differences in prioritising, funding, and monitoring decisions before and after the GPS 2018 and whether that change has continued or accelerated. The intersection of these dimensions is represented in the matrix design shown in Figure 4, with three horizontal "influence opportunities" and three vertical decision scales, each broken down into the three GPS periods. The intersections of the vertical and horizontal domains show points to look for in the data.

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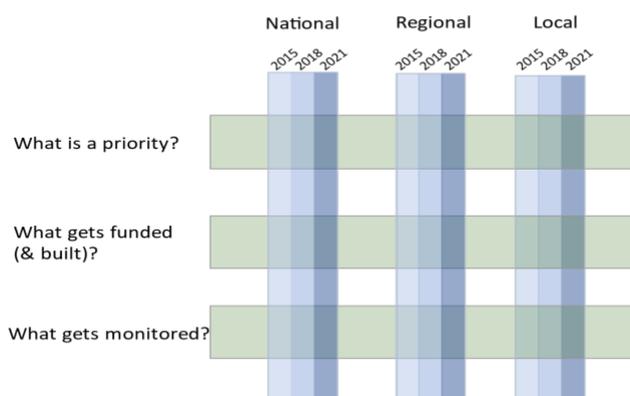
[3]   Base graphic retrieved from https://www.nzta.govt.nz/planning-and-investment/planning/one-network-framework/onf-use-in-other-frameworks/.

Figure 4 Framework for evaluating the impact of the GPS 2018

In the Orientation workshop, the RLTP was identified as a point in the pathway where local and regional priorities meet with national investment priority signals – expressed in the workshop as "bottom up meets' top down". What is put forward into the RLTP was seen as reflecting local conditions and history (for example, underinvestment in some areas of the network) and local and regional interpretation of the investment signals from the GPS and Waka Kotahi. Therefore, what is funded for implementation through the NLTF would represent regional and local priorities in the submitted RLTP, which were then filtered through the national priorities expressed in the GPS.

What is monitored would be a combination of what was funded and developed and what needed to be assessed and valued. For example, the historical emphasis on roads and vehicles has meant that active modes needed to be more visible in monitoring indicators, impacting the ability to report on the outcomes for these modes.

Three key conclusions emerged from the Orientation workshop to inform the next phase of populating the framework and gap analysis. The conclusions were:

1   "Follow the money": without changes in funding, little else in the transport system will change
2   There is a considerable lag between the GPS and behaviour change, notably the time taken for projects to be approved and implemented ahead of observable change.
3   The Regional Land Transport Plans (RLTP) that feed into the NLTP represent the intersection between the "bottom up" interests of Regional and local councils and the "top down" interests of central government.

2.2 Data gathering and assessment – Phase 2

2.2.1 Populating the evaluation framework

Phase 2 started with a stocktake to gather and assess quantitative and qualitative data and data sources to populate the evaluation framework. The stocktake sought data from the following sources:

- Data reported by Te Manatū Waka as part of GPS annual reporting.
- Te Manatū Waka's Transport Indicators related to mode shift, with particular reference to the healthy and safe people, environmental sustainability, and inclusive access outcomes from the Transport Outcomes Framework.
- The Sustainable Urban Mobility Benchmarking prototype.
- Waka Kotahi data, including NLTF data from Transport Investment Online (TIO).
- Regional Land Transport Plans (RLTPs) and relevant regional strategies (for selected stakeholders).
- Other data (where available and relevant), such as local authority maintained data.

The stocktake identified a wide range of data and reporting sources. Full details of the stocktake are contained in the GPS Mode shift Evaluation Stocktake spreadsheet (Appendix 1). The first tab (GPS Indicator Maturity) indicates where indicators are available across the framework, with more details for each indicator given in the Indicators tab. In addition, the stocktake included qualitative information from documents (such as the signalling of priorities through wording) and quantitative reporting accessed through Transport Investment Online (TIO). Existing reporting has been referenced in this report (rather than downloaded). The stocktake did not include quality

assessments of indicators or the extent to which indicators and data have been used for reporting purposes.

The stocktake detailed the range of indicators available in each horizontal "influence opportunity" dimension, along the vertical dimensions of the decision scale, and for each GPS period. Some indicators were available for all scales and periods, such as transport mode share from the New Zealand Household Travel Survey. Others were more limited and were only available at certain geographical scales and periods. For example, several indicators from the Sustainable Urban Mobility Benchmarking prototype were originally only calculated for selected cities but could be calculated for others as needed.

The stocktake was used to populate the evaluation framework in Appendix 1. For ease of reading, the stocktake has been summarised in Tables 1,2 and 3 below.

Table 1 summarises opportunities to observe the GPS's influence on priorities in existing data and indicators. It describes the sources of information and indicators that could be used to track differences in what is considered a priority across the three decision making scales – national, regional, and local. For example, priorities for transport have been set at a national level in the GPS strategic priorities, regional priorities in plans such as Arataki and RLTP KPIs, and local plans in specific mode plans such as Auckland 2050. National level changes in priorities could also be seen in the composition of activity classes, differences in the allocation of funds in the GPS to activity classes supporting active and public transport modes (mode shift promoting), and what is included in the NLTP for each period. Regional priorities were seen in RLTP region submissions to the NLTP programme and what was included in the NLTP. While not directly within the transport arena, several significant local priority setting processes were also identified as relevant to mode shift, notably local Long Term Plans, District Plans and Infrastructure Strategies.

Table 1 Opportunities to observe the influence of the GPS on determining priorities in existing data and indicators (for full details, see Appendix 1)

	Decision making scales		
	National	**Regional**	**Local**
What is a priority?	Strategic priorities	Regionally focused long term strategic plans, including Arataki	Specific mode plans
	Activity class composition and funding range	RLTP KPIs	Long Term Plans
	Funding allocation and band position		Infrastructure Strategy
	Proportion of total projects included in NLTP by mode shift promoting activities	Proportion of total projects included in RLTP by mode shift promoting activities	District Plans
	Proportion of total projects included in NLTP by mode shift promoting activities	Proportion of total funding included in RLTP by mode shift promoting activities	

	Decision making scales		
	National	**Regional**	**Local**
	Statement of Performance Expectations (SPEs) – primary/secondary		

Table 2 summarises available data and indicators that could be used to track differences in the activities and projects funded and developed over time. As only some of the activities included in NLTP were approved for funding within a given GPS period, observing the types of activities that were successfully approved for funding was identified as a potential indicator. Other data sources identified included operational information on active and public transport assets and service levels.

Table 2 Opportunities to see the influence of the GPS on funding decisions in existing data and indicators (for full details, see Appendix 1)

	Decision making scales		
	National	**Regional**	**Local**
What is funded and developed?	NLTP – Proportion of total projects by mode shift promoting activities: approved for funding	Regional proportion of total projects by mode shift promoting activities – approved for funding	Allocated funds in the RLTP by category, by local council
	NLTP – Proportion of total funding by mode shift promoting activities – approved for funding	Regional proportion of total funding by mode shift promoting activities – approved for funding	Number of funded projects in the RLTP by category, by local council
		Public transport funding per capita (Regional Public Transport Plan)	Footpath & Cycleway maintenance funding per capita (Annual/Asset Management Plan)
		Public transport concessions	Increased KM of cycle network

Table 3 summarises the types of data and indicators available for monitoring mode shift at national, regional, and local scales. Note that while the availability of indicators means monitoring is possible, it does not indicate the extent to which indicators were being used to observe progress by decision makers. It included nationally available outcome indicators that can be disaggregated at smaller scales (such as VKT) and those which have been measured at local scales only to date (such as space dedicated to sustainable urban mobility). For the Transport Outcomes Framework Transport Indicators (released in 2019-20) and the reporting measures from the GPS on Land Transport 2018 Annual Report, Appendix 1 contains indicators relevant to monitoring mode shift. Some indicators are directly relevant (such as the time spent travelling by active modes), and others are generally relevant but report different modes (such as transport related injuries). Appendix 1 also includes proposed indicators from GPS 2021, where there is no comparable reporting measure from GPS 2018 or the ToF Transport Indicators.

Table 3 Opportunities to see the influence of the GPS in what is monitored in existing data and indicators (for full details, see Appendix 1)

	Decision making scales		
	National	Regional	Local
What is monitored?	Transport mode share to work, education (Census)		
	NZHTS		
	VKT		
	Emissions		
			Cycling mode share by gender
	ToF Transport Indicators, reporting measures from the GPS on Land Transport 2018 Annual Report & proposed indicators from the GPS on Land Transport 2021 — specific indicators identified in Appendix 1	Average punctuality of bus services, perception & customer surveys	Public transport journey time & cost comparison
	Access to PT stops		
			Space dedicated to sustainable urban mobility
			Footpath level of service
			Pedestrian crossings per km2
			Cycling and walking safety

Three indicative analyses are shown below in Table 4, Figure 5 and Figure 6 as proof of concept for the framework and data. A change in what was prioritised nationally can be seen in additional mode shift promoting activities in 2018 and 2021 (Table 4). For example, GPS 2018 introduced two new classes for public transport, and GPS 2021 separated public transport into services and infrastructure.

Table 4 What is prioritised – changes in the composition of activity classes over GPS periods

	Activity Class		
	20015	2018	2021

Roading	State highway improvements		
	State highway maintenance		
	Local road improvements		
	Local road maintenance		
	Road safety promotion	Promotion of road safety and demand management	Road to Zero
Mode shift promoting	Public transport		Public transport services
	Walking and cycling improvements		
		Rapid transit	Public transport infrastructure
		Transitional rail	
Other	Regional improvements		
	Road policing		
	Investment management		
			Coastal shipping

The SUM Policies and Plans indicators demonstrate the type of information available to monitor local and Regional priorities through the presence of inputs to mode shift (see Figure 5 and the link available here for greater details). The policies and plans provided information on the maturity of inputs for mode shift in recent years taken from indicator development for benchmarking SUM in five high growth urban councils. The indicator shown was a baseline for future policy and plan development and could be used to align with subsequent changes in the GPS in the future. While all five councils had plans to support walking, cycling, and public transport, there were differences in whether targets were set and the extent of monitoring and reporting of performance towards goals.

Walking, cycling and public transport plans

	AUCKLAND	HAMILTON	TAURANGA	WELLINGTON	CHRISTCHURCH
WALKING PLAN	Auckland Plan 2050	Access Hamilton Strategy — Council have advised that a new Active Travel Plan will be created as part of the new Access Hamilton Strategy	Tauranga Transport Strategy 2012-2042	Wellington City Walking Policy	Christchurch Transport Strategic Plan 2012-2042 (currently in the process of being updated)
Indicators	✓ Yes - Indicators are quite broad and look at multiple modes.	✗ Unable to confirm – It remains to be seen whether the new plan will include any indicators or targets.	✗ No	✓ Yes	✓ Yes - Indicators are quite broad and look at multiple modes.
Targets	✗ No	✗ No	✗ No	✓ Somewhat – the Wellington Annual Plan includes some indicators relating to walking.	✗ Not currently - Christchurch City Council have advised that specific targets will be included in the new plan.
Is performance monitored and reported on?	✓ Yes	✗ No	✗ No	✓ Somewhat	✓ Somewhat
CYCLING PLAN	Auckland Plan 2050	Hamilton Biking Plan 2015-2045	Tauranga Cycle Plan	Wellington City Cycling Policy	Included as part of the Christchurch Transport Strategic Plan 2012-2042 (currently in the process of being updated).
Indicators	✓ Yes - Indicators are quite broad and look at multiple modes.	✓ Yes	✓ Yes	✓ Yes	✓ Yes
Targets	✗ No	✗ No – Except for the user satisfaction indicator.	✗ No – Except for the mode share indicator.	✗ No	✗ Not currently - Christchurch City Council have advised that specific targets will be included in the new plan.
Is performance monitored and reported on?	✓ Yes	✗ Unclear	✗ Not currently	✓ Somewhat	✓ Somewhat
PUBLIC TRANSPORT PLAN	Auckland Regional Public Transport Plan 2018-2028	Waikato Regional Public Transport Plan 2018-2028	Bay of Plenty Regional Public Transport Plan 2019	Wellington Regional Public Transport Plan, soon be replaced by the Wellington Regional Public Transport Plan 2021-2031 (currently in draft).	Canterbury Regional Public Transport Plan 2018-2028
Indicators	✓ Yes	✓ Yes	✓ Yes	✗ Not currently - The new Wellington Regional Public Transport Plan 2021-2031 (currently in draft) includes a set of indicators to measure performance, all of which include specific targets.	✓ Yes
Targets	✓ Yes - Plan includes expected outcomes for 2021.	✗ No – Except for the user satisfaction indicator.	✓ Yes	✗ Not currently	✓ Yes
Is performance monitored and reported on?	✓ Yes	✓ Yes	✓ Yes	✗ Not currently	✓ Yes

Figure 5 What is prioritised – SUM policies and plan supporting mode shift. Taken from the SUM benchmarking report (2022, p. 41)

The TIO analyses in 2.4.3 provide a more detailed example of how to monitor change over time in what is funded and developed at national and Regional scales. The TIO analyses demonstrated national and Regional priorities in what is included in plans and what was subsequently approved for funding. Unfortunately, local district level breakdowns still need to be completed for this report. However, they could be available for analysis, although small numbers restrict in depth analysis in many regions.

Figure 6 illustrates two indicators used to benchmark mode share in SUM. Stats NZ 2018 Census data was used to compare mode share for transport to education, and the Household Travel Survey was used to measure the gender difference in cycling mode share (moving average 2015-2018).
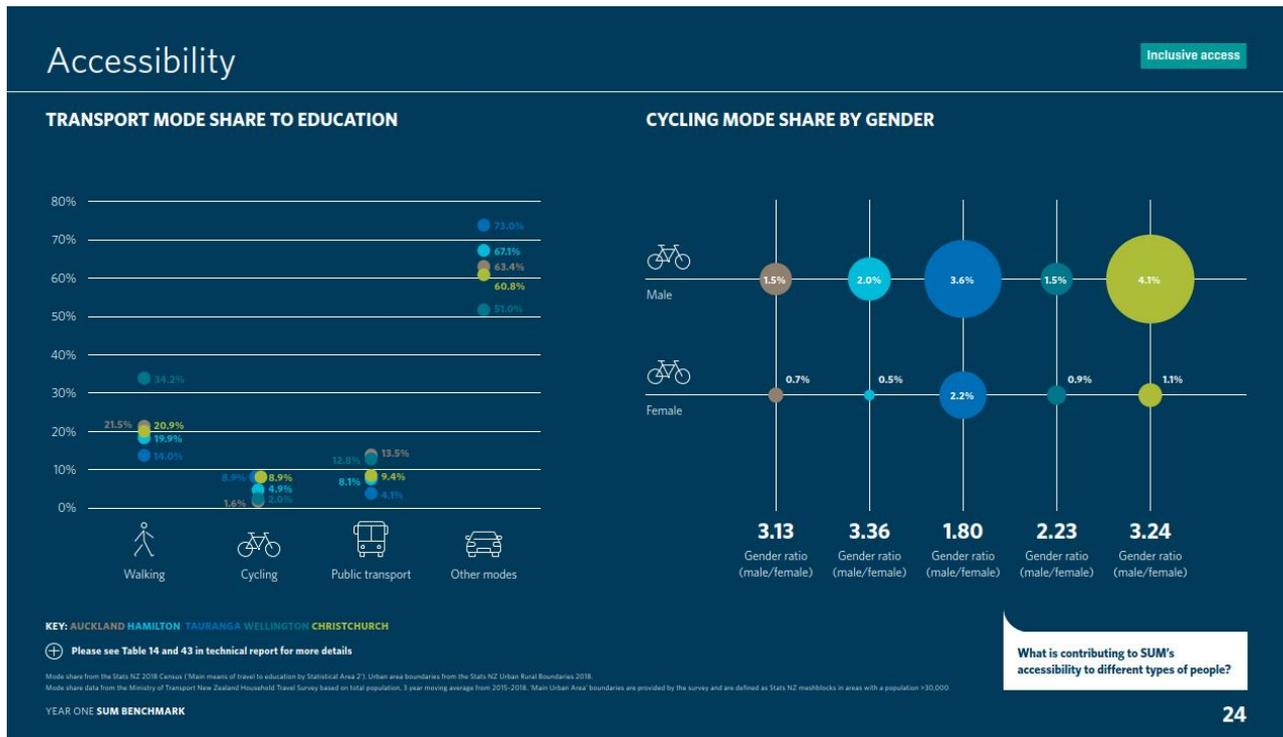
Figure 6 What is monitored – SUM indicators for mode share. Taken from the SUM benchmarking report (2022, p. 28)

Overall, indicators were identified across the evaluation framework. Data sources included RLTP documents, council strategy documents, Waka Kotahi's StoryMaps tool and Transport Investment Online, Stats NZ Census, the Transport Indicators of the Transport Outcomes Framework, and the previously mentioned New Zealand Household Travel Survey and SUM.

Identifying indicators that corresponded to the GPS periods was challenging. While considered significant for influencing mode shift, the policies and plans that could be used to observe local transport priorities were generally not tied to a specific period. While several indicators were successfully identified to populate the "What is monitored" domain, historical data was less readily available. Several monitoring indicators reported in SUM reporting were calculated based on data capturing the status of the network. However, it is unclear whether point in time historical data would be available for earlier periods, allowing comparisons over time (for example, retrospectively extracting data on access to public transport levels for the 2018 and 2015 periods). A further temporal challenge to populating the framework was that the timing of key data collections and reporting (such as the Census and the Household Travel Survey) often did not correspond with the three time periods of interest. This limited the capacity to monitor changes in outcomes by GPS period.

Rich information on the local and Regional priorities for funding and project rationales was available in the most recent RLTP documents. However, the quality of information varied and extracting information was time consuming and historical records would need to be obtained from councils in many cases.

2.2.1.1 Gap Analysis

Populating the framework from the stocktake of indicators highlighted gaps. A greater range of indicators was readily available from the existing reporting process at the mode shift outcome end of the pathway between the GPS and achieving mode shift. While indicators were found for all the intersections between dimensions, the spatial and temporal maturity of the indicators varied considerably. The indicators included in the stocktake spreadsheet (GPS indicator maturity tab) were assigned one of the following maturity categories based on their availability across different scales and times:

* Indicator available at all scales and periods.

* Indicator available at identified scales and periods – can be calculated for others.

* Indicator only available at identified scales and periods.

* Indicator data incomplete in some locations and times.

As described above, some of these gaps are due to limitations on the scale of indicators — for example, an indicator was only available or appropriate at a local level and, therefore, not included at Regional or national levels. The SUM included a range of novel indicators — such as the space dedicated to sustainable urban mobility and time and cost comparisons for public transport and private vehicle journeys. At the time of writing, these were only available for five cities (Auckland, Hamilton, Tauranga, Wellington and Christchurch).

Many of the monitoring indicators were restricted to recent periods. The SUM indicators were created using the latest data available in 2021 and, therefore, did not provide a look back at the transport situation during past GPS periods. As noted above, there may be other options than retrospectively calculating many of these indicators for past periods. For example, the public transport and private vehicle time and cost comparisons (SUM, p. 27) relied on current data on transport networks, fare prices, and vehicle running costs. An investigation would be needed to determine whether the archive of this information is available in sufficient detail to allow the indicator calculation methods to be replicated for past years.

Another issue is that the indicator reporting periods do not always align with GPS cycles. For example, Statistics New Zealand's five yearly Census provides useful information on travel to work and education. However, the gap between reporting makes it challenging to use the data to see the impact of the three yearly GPS.

Many indicators also rely on reporting by multiple organisations, which can result in missing or partial data for some locations. These include many transport network assessment indicators, such as the average punctuality of bus services or the number of pedestrian crossings per square kilometre. The SUM benchmarking exercise illustrated the challenge of developing comparable indicators that can be applied across multiple organisations. For example, information on service levels for cycling infrastructure was not readily available in the centralised RAMM (Road Assessment and Maintenance Management) database at the time of data collection (Figure 5).

2. STUDY PHASES

LEVEL OF SERVICE OF OUR CYCLE NETWORKS
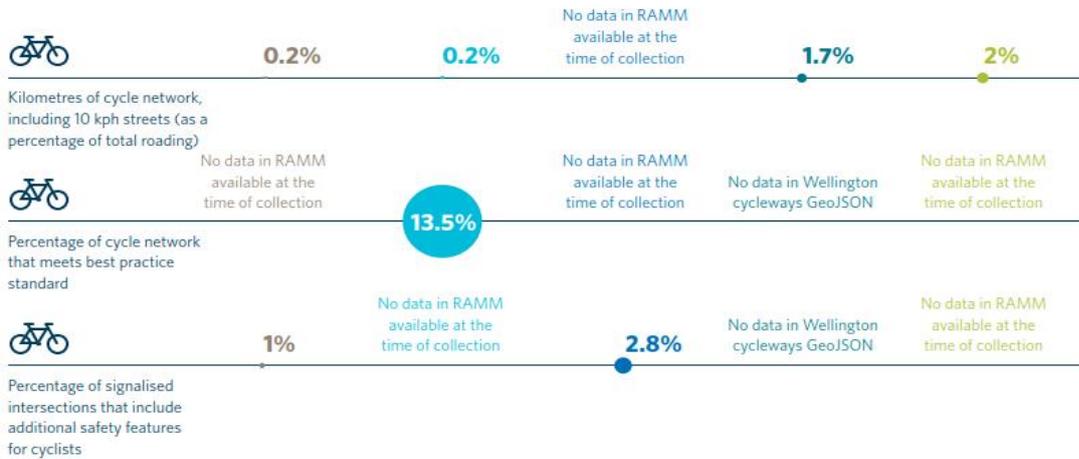
Figure 7 Example of variable information for cycling levels of service indicator. Taken from SUM benchmarking report (2022, p. 32)

In other indicators, information might be more widely available but does not correspond with the councils responsible for the infrastructure. For example, data on injuries to people who walk, and cycle is available as hospitalisation rates for a DHB, which in many cases do not align with local authority boundaries (eg, Capital & Coast DHB includes Wellington city and the Kapiti Coast, Figure 6).

Figure 8 Example of variable information for a cycling & waking safety indicator. Taken from the SUM benchmarking report (2022, p. 25)

2.2.1.2 Overall insights and implications from data gathering and assessment

The SUM benchmarking exercise highlighted the challenges to developing a multi-modal set of indicators, but also the opportunities of increasing the visibility of active and public transport modes in the transport system. Lessons learnt relevant to the development of GPS evaluation indicators include:

- Working with stakeholders to agree on indicator and evaluation priorities increases the value of reporting to all parties.

- Optimizing alignment between monitoring and reporting programmes (such as the One Network Framework, Land Transport Benefits Framework, and Transport Indicators) can reduce the burden on reporting and make the most of available data.

- Active modes were less visible in existing indicators and datasets. The increasing expectation for collecting high quality data on active modes will help normalise the inclusion of non-vehicle, non-road transport into standard reporting.

- Not everything needs to be measured all the time. Bellwether indicators such as the gender ratio of cycling mode-share can be used as proxies where data is constrained (for example, age and ethnicity cycling mode-share was not able to be calculated at city level due to small numbers).

- 'Input' type indicators provided valuable insights into how mode-shift is being planned and prioritised for but is time consuming to gather.

A key difference between developing indicators for the SUM and populating the evaluation framework here is the timeframe. SUM indicators were developed using the latest data available at 2021 whereas evaluating change across GPS periods requires historical data for the relevant periods. Further, the evaluation framework sought to cover national, regional, and local decision-making scales, compared with the city scale of SUM. While many indicators have been used to populate the evaluation framework, it is not an optimised list. It is likely a smaller number will add significant value relative to the effort required to create them at the appropriate scales and periods. The following insights and considerations made in SUM could be applied to guide the prioritisation and refinement of future GPS evaluation indicators:

Insights related to effort

We can categorise the indicators into three categories in terms of the effort involved in capturing and reporting:

- i Low effort - currently reported (example, mode share %), which are easy to incorporate in a prototype.

- ii High effort where processing and calculation is required (e.g., "Cost to travel by public transport compared to the cost to travel by private vehicle", and "Time to travel by public transport compared to the time to travel by private vehicle"). These are time-consuming to incorporate in a prototype and calculations need methodology and definition to be meaningful.

- iii High effort where judgement is required to assess the indicator, leading to effort in drilling into data sources and trying to make useful comparisons across

councils (example, "Presence and details of an overarching sustainable urban mobility strategy"). These are time-consuming to incorporate in a prototype and need definition and guidance to be meaningful.

Given that around half of the 66 indicators are not currently reported and fall into categories (ii) and (iii), three implementation considerations emerge:

i   Quality control will need to be an important part of implementing the prototype programme and ensuring calculations are consistent across councils.

Council capacity will be a big factor in the prototype success. Reducing the number of indicators in the prototype or otherwise considering how to reduce the burden will enhance the chance of success.

Support is needed from Waka Kotahi to refine and develop novel indicators to reduce the burden on councils.[4]

2.3 In depth insights – Phase 3

The third phase focused on stakeholder engagement and case study interviews to provide a qualitative assessment of the pathway between the GPS and mode shift to complement the insights from quantitative analysis. Throughout this phase, we sought to identify the relevant issues and lessons learnt from stakeholders on the interpretation and application of GPS investment signals concerning mode shift.

We conducted ten interviews with stakeholders from Waka Kotahi, Regional Councils, and local councils representing urban and rural areas. Purposive sampling included people at Waka Kotahi who translate the GPS into the Investment Decision Making Framework (IDMF) and those who develop the NLTP, people at Regional Councils who develop RLTPs, people at local authorities who were involved with Annual Plans and Long Term Plans (LTPs), and those who developed work plans. In addition, several interviewees were in relevant positions over the years and could report from their experience in different agencies and positions.

Interviewees were recruited from the following agencies:

• Greater Wellington Regional Council
• Wellington City Council
• Auckland Transport
• Otago Regional Council
• Kaipara District Council
• Waka Kotahi (national and Regional – Northland, Auckland, Canterbury, and Otago – offices).

Interviews (approximately half an hour to an hour long) were held with each of the interviewees via Microsoft Teams. The interviews built on our understanding of the relationship between investment and operational and planning decisions with the following topics discussed:

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4   Extracted from "Benchmarking Sustainable Urban Mobility in Five New Zealand Cities. Prototype Technical report (2022), available from Waka Kotahi.

- The interviewee's experience with RLTPs and NLTPs.
- Their response to the changes in GPS 2018.
- The approach they took when interpreting and applying the GPS investment signals.
- How that approach has changed (or not) following the introduction of GPS 2018.
- How they navigated through the process of prioritising projects and funding allocations.
- Any evidence they see of change supporting mode shift, such as decisions about priorities, how funds are allocated, political support, and the visibility of mode shift goals in policies and plans.
- Their thoughts on how the GPS will impact mode shift and how future iterations could be improved to further support mode shift.

The interviews represent the experiences and perceptions of people involved in different ways in prioritising mode shift promoting activities. They were semi-structured, with the topics above used as prompts to direct the conversation flow. We used narrative methods to help reduce the participant's burden to recall specific details by allowing them to focus on the events and processes that were significant to them. To gain additional insights, we also encouraged interviewees to discuss relevant examples, such as the process a particular project went through to be included in an RLTP submission. This allowed us to draw a rich picture documenting the application of GPS investment signals and the linkage between the inputs, outputs, and outcomes relating to mode shift.

Interviews were reviewed to identify common themes summarised below with quotes (in italics) to illustrate points.

The overall impact of the GPS 2018

Registering a change in the signal on the importance of non-private vehicle modes

The GPS 2018 was considered a strong departure from previous iterations by all interview participants, who recognised its increased emphasis on mode shift. Participants in some locations (particularly the metro areas) spoke about how the changes aligned with their council's direction. In contrast, others in regional areas found that it was a more abrupt change away from a focus on safety and efficiency.

The importance of a change in activity classes and fund allocations

Participants noted that before and after the GPS 2018, walking and cycling projects were often funded through local road activity classes, so there was little change in some respects. However, the new activity classes were generally seen as enabling mode shift promoting projects (such as rapid transit and transitional rail in 2018 and adding a second public transport activity class to separate infrastructure and services in 2021). The change in direction made these participants consider different types of projects.

> "The more [funding] that went into those activity classes where we're pushing a lot of our program, the easier it is to get it through."

The term "packaging" was used frequently to describe how projects were made to fit a particular funding class to fund necessary work. "Packaging" was a means of aligning projects with the GPS priorities through the strategic selection of activity class and terminology.

Participants also talked about the limits of the activity classes for getting funding for long term, network wide, urban form projects — which were identified as essential to achieving significant mode shift.

The importance of the NLTF for achieving large scale change

In bigger cities, the NLTF was seen as an end that the council was already working towards — and the changes in GPS 2018 mainly made it easier for them to sell their case. Participants from smaller councils discussed the need to unlock funding from the NLTF by packaging mode shift promoting projects with other work. Many projects were seen as having a mode shift promoting aspect which could be used to support a funding request. In almost all cases, the reality of a co-funding model was that if a project were not funded through the NLTF, it would not proceed.

A common point discussed by all participants was that they observed it being easier to get piecemeal projects through and harder to get more complex, longer term projects through (such as a network wide programme). It is not surprising that simpler projects are easier to get approval for. However, many participants felt it would be easier to see substantive change with a greater focus on more ambitious mode shift initiatives.

Changing priorities

Getting mode shift projects prioritised

Participants recognised that the NLTF could not cover all requests and that a process for prioritising was needed. Some also reflected on changes in prioritising activities over the three GPS periods, with implications for activities included in the NLTP. Following Ministerial concerns with implementing the GPS 2018 changes to the investment decision making process developed with the sector, participants talked about the increased emphasis on the business case process in 2021. The Investment Prioritisation Method (IPM) used to prioritise projects was referred to several times as more focused on evidence, in contrast to the more strategic approaches used previously (such as the Investment Assessment Framework used for the 2018 NLTP). While recognising that not everything could be funded, most participants discussed the difficulty in gathering sufficient evidence to make a case for prioritising mode shift promoting projects. It was felt that the high evidence requirements of the IPM tend to favour larger councils and certain types of projects where evidence is more readily available. The shift away from a more strategic approach to relying on business cases and the IPM was seen by many as inflexible and unresponsive to projects leading to mode shift. Interviewees provided Place making and Travel Demand Management (TDM) as two comprehensive initiatives considered effective for mode shift but for which evidence was difficult to obtain for specific component projects. Discussion indicating a preference for a more strategic approach signals the difficulties councils face in getting the full range of projects needed to support mode shift funded.

Evidence gathering in smaller councils was also seen as more difficult because they need capacity, and there is "less to see" (for example, less foot traffic) compared to larger urban areas.

Some participants raised the interpretation and application of the IPM in 2021 as an example of how the prioritising process limited what was eligible for funding in the mode shift promoting activities. For example, Low Cost, Low Risk (LCLR) funding was described as an important avenue for much of the work to maintain and improve walking and cycling infrastructure. However, in the previous cycle, this was considered primarily directed towards larger urban areas (as directed by GPS 2018).

Negotiating priorities

Participants talked about the need to negotiate across multiple parties within councils, between councils, transport and non-transport teams, council officers and elected officials, and councils and Waka Kotahi (or, in the case of Auckland, directly with Cabinet).

This was partly due to councils recognising the need for a wide range of place based projects to achieve mode shift. Transport initiatives, therefore, needed to be aligned with urban form initiatives and plans, including statutory District Plans, Long term Plans, and non-statutory spatial plans. Aligning transport projects with a council's urban form goals was therefore critical to gaining political buy in.

> As a council officer:
>
> "Constantly balancing the tension between technical expertise and political representation. And it's neither. It's always murky."

The amount of funding requested was also constrained by the ability of a council to contribute their share. In general, smaller councils often struggle with competing priorities more than their larger counterparts due to smaller ratepayer funded budgets and comparatively large road networks for the size of their populations. This constrained their ability to respond to new priorities, whether it was mode shift or any other transport activity. A low population density also means there is less opportunity for mode shift.

> "(In a) small rural area (mode shift) does not have as much relevance, particularly due to pressing local road maintenance and safety issues."

Other mode shift drivers

All participants talked about the non-transport drivers that act as opportunities and barriers for mode shift. These include:

- Auckland's Regional Fuel Tax fund was seen as the biggest driver of change in the city because of the additional funding available for new work.
- The need for alignment across other types of infrastructure. Examples were given of missed opportunities to implement mode shift projects as part of flood protection work.
- Varying levels of political will within councils for mode shift.
- Other transport initiatives include the Urban Cycleways Programme (UCP) and Let's Get Wellington Moving (LGWM).

Land use also consistently came up as a significant driver of mode shift and, in some cases, was talked about as the primary means for achieving significant change — with transport seen as an enabler (or constraint).

> "If you're managing speed, and you're managing [transport] projects, and you're managing spatial plans, those three things are the levers that you need to transform."

However, participants also talked about the difficulty of fitting urban form projects (such as town centre developments) into the activity classes.

Observing change

Timelines

There was general agreement that seeing the mode shift impacts from the GPS 2018 will take many years. The time taken from conception to its use is typically five to six years for medium sized projects and even longer for larger projects. Therefore, it could take around a decade or more before mode shift caused by initiatives starting now is observed in travel behaviours. Participants also talked about the need for network wide improvements to deliver substantive change, meaning that the timelines could be longer.

> "[Say] you poured a whole lot of money into cycling. It would probably take us four years to get things on the ground and at enough scale. To get a network effect, you're probably looking at closer to ten."

Participants also talked about the challenge and delays that arise from needing to coordinate with other processes, such as Long term Plans, whose timelines sometimes differ from the RLTP process. This makes it harder to disentangle the impact of the GPS from these other significant drivers.

Observing changes in priorities

Observing change in what is prioritised for funding was seen as difficult because of how much of the walking and cycling work is funded through local road activity classes, LCLR funding, and the pre-2018 Urban Cycleways Programme (UCP). However, participants felt there was value in monitoring the proportion of the mode shift promoting activities being put forward for NLTF funding, as this will reflect what is considered important and possible at a given time. However, delving into funding is more complicated. The proportion of funding given to mode shift promoting projects is "messy" but observing the change in the total proportions across activity classes was considered useful. However, it was felt there was too much noise at a project level which would require deep dives into the detail of business cases over the different GPS cycles.

2.3.1 Overall insights and implications from interviews

The interview participants provided valuable insights into how the GPS process in recent years influences what is prioritised and what is funded and built. Based on the interviews, the following points consider what this means for evaluating the impact of the GPS 2018 on mode shift:

- Some saw the GPS aligning with their council's strategic direction, while for others, it was more of a change. But even when there was already strong alignment, the GPS was still seen as better in enabling active and public transport modes.

  Implication: a difference should be observable in what was prioritised for funding.

- Interviewees regarded the current GPS NLTF process as not well suited to the projects that will bring about a substantial mode shift. They discussed the need for long term, network wide, urban form initiatives to achieve the level of mode shift desired. Transport projects need to be integrated with and in support of changes to land use, urban intensification, and place making. The reliance on the IAF (for 2018) and IPM (for 2021) process for prioritising was seen by some interviewees as leading to bias against more complex and effective mode shift promoting work.

  Implication: what was funded may reflect something other than what is most effective at achieving mode shift.

- The extent to which the GPS can influence projects was considered limited by a council's political willingness, funding and resourcing capacity.
  Implication: the scope of change will be constrained.

- Specific active and public transport activity classes with increased funding allocations made it easier to approve mode shift promoting projects.
  Implication: more mode shift promoting projects should be observable in what was funded.

2.4 Analysis and interpretation — Phase 4

The analysis and interpretation phase focused on investment prioritisation using data extracted from Transport Investment Online (TIO). The analysis was informed firstly by synthesising findings from Phases 1-3 and stakeholder feedback and guidance on that synthesis.

2.4.1 Findings synthesis

The results from the data assessment, quantitative and qualitative information gathered in Phases 1–3 were brought together into synthesis to guide subsequent analysis and interpretation and were derived from:

- the framework development (including the Orientation workshop)
- applying the framework through a data scan of available information, including exploratory TIO analyses, and
- in depth interview insights on the influence pathways between GPS 2018 and mode shift.

The synthesis resulted in a summary of findings from work up to this point (Table 5). In addition, the synthesis identified opportunities and barriers for enhancing the impact of the GPS on mode shift that is relevant to how the impact can be observed and evaluated.

Table 5 Summary of findings from Phases 1-3

Overall impact of the GPS 2018	
Was there a shift in priority from government?	Overall, yes. There was a shift towards non-vehicle modes. Some councils were already on the way. For others, it was a bigger change in focus.
How important was the NLTF for achieving change?	Having new explicit mode shift promoting activity classes and funding enabled change, but:
	Small margins to play with, given what was already committed and contracted.
	NLTF was only one part of the overall transport dollar.

Overall impact of the GPS 2018	
What could improve or enhance the impact of the GPS?	Optimise the small funding margins for funding and address the piecemeal nature of mode shift project portfolios.
	NLTF could have a greater impact by funding the long term, complex projects needed to achieve mode shift.
	GPS could better consider wider national & local strategies, plans, policies, and aspirations.
	Take advantage of opportunities for mode shift from other factors affecting land use and urban form.

Changing priorities	
Was there a shift in what was put forward?	GPS enabled explicitly mode shift promoting projects to be put forward, with mode shift as the primary benefit.
	GPS and funded classes made it easier to get political buy in for mode shift promoting projects.
	Walking and cycling work continued to be funded through local road activity classes.
	Repackaging projects to fit with GPS signals was a pragmatic response.
How much did GPS help negotiations for mode shift projects?	There was more opportunity for mode shift initiatives in bigger cities, but…
	• Still constrained to projects rather than programme scale change.
	• Council "share" funding restrictions (as part of wider council spend) played a significant role in what can be put forward.
	• Smaller councils are restricted by the type of mode shift projects they could put forward – what works in a metro setting may not be useful or relevant in a provincial or rural setting.
	• Small councils were constrained – a lower ratepayer base to pay for maintaining a relatively large road network.
	Improved use of data and evidence could reduce the (relative) invisibility of active and public transport, the impact of the limited evidence base for effective mode shift promoting interventions because the type of project

Changing priorities	
	is hard to evaluate, and a reliance on evidence in the business case process.
(Apart from the GPS) what else is going on that matters?	There was room for the GPS to better recognise and account for wider local strategies, plans, policies, and aspirations.
	Could better utilise opportunities for implementing mode shift projects from other factors, eg, 3 Waters
	Other drivers may be more important for achieving mode shift, notably urban form, housing pressures, intensification/sprawl.
	Recognise that GPS timelines do not necessarily correspond to other strategic planning and funding timelines.

Observing changes	
Were there alternative sources identified to observe impact empirically?	No further sources of information other than what has been identified to date
How long before we might see a change in the outcomes?	Five to ten years to see changes in mode shift, especially for changing networks & complex programmes. It is not just getting the intervention funded and built, the indicators have lags in reporting.
What enables improved observation of changes?	Shift towards mode neutral reporting, for example:
	• Sustainable Urban Mobility Benchmarking prototype
	• Crash Analysis System (CAS) includes cycle accidents (but level of under reporting is unknown)
	• Census includes education travel (broader range of trips that are more likely to include active & PT modes)
What is useful to monitor?	Changes in the proportion of projects put forward in each activity class.

Observing changes	
	Changes in the total allocated funding in each activity class (but messier given cross activity funding of mode shift promoting activities).
	Allocating an activity to a single activity class does not easily allow for projects that span multiple classes. It means active mode projects that are part of a wider project are less visible and undercounted, especially for smaller councils who are less likely to put forward a single mode shift project than to look at how to incorporate into roading projects.

2.4.2 Workshop

An online mapping workshop involving Te Manatū Waka and Technical Advisory Group representatives was held, where attendees were provided with the synthesised findings and a discussion about the implications for evaluating the GPS impact on mode shift. The workshop allowed attendees to identify new or different insights from work undertaken and signal focus areas for analysis.

Two breakout sessions were used to discuss and debate the synthesised findings from phases 1-3, noting surprises, critical gaps and priorities for improving the GPS to achieve mode shift. Secondly, a set of deliberately positional statements on the implications of the synthesised findings for evaluation (Table 6) were used to prompt discussion about evaluating the GPS 2018 and invite agreement, disagreement, comments, and explanations.

Table 6 Summarised statements of the implications of the evaluation of the GPS on mode shift

Summary statements for workshop discussion – agree, disagree, explain
•   A difference should be observable in what was prioritised for funding at local levels.
•   What was funded may not reflect what is most effective at achieving mode shift.
•   The scope of change will be constrained (by the existing funding mechanism).
•   Specific mode shift promoting classes should see more projects put forward and funded.
•   Moderating processes may not align with priority signals in the GPS.
•   Better open built environment data will enable better evaluation of GPS in the future.
•   GPS needs to interact with other transport funds to have greater impact on mode shift.
•   GPS needs to interact with other drivers to have greater impact on mode shift.

These findings were discussed in breakout groups where participants used a digital whiteboard to add comments and feedback and explored linkages between the data collected. Key questions discussed in the workshop included:

•   How has the GPS supported mode shift?

- How has the GPS changed priorities regarding what is negotiated, put forward, and funded?
- What other factors are helping or hindering mode shift, and how does the GPS interact with them?
- What are the most useful tools and methods for observing the impact of the GPS on mode shift?
- Are there barriers and opportunities to increasing mode shift through NLTF decision making?

The following themes were concluded from the breakout group discussions.

1   There was an overall agreement with the findings and implication statements

    a   No new data sources were identified but updated TIO analyses were recommended.

    b   The implication statements are necessarily simplified and therefore, only provide partial explanations, and come with caveats.

2   Funding more work for mode shift

    a   Along with the requirement of the NLTF to give effect to the GPS, the GPS 2018 and 2021 signals new ways of allocating funds have led to more mode shift promoting work being funded.

    b   Funding shorter term, project based work as currently done can contribute to mode shift when they are connected & coordinated over spatial and time scales and modes. However, it was unclear to participants whether there were sufficiently effective mechanisms to promote coordination and to look beyond the three year cycles.

    c   Look for an increase in the whole "pie" and how it is divided – both considerations matter.

3   Geography matters

    a   Mode shift means different things in different places and times and will therefore be responsive to different signals.

    b   The bottom up nature of decision making affects what is put forward or even considered in the first place. Local politics and priorities matter over and above the GPS.

4   Time matters

    a   There are significant time lags to see the impact of a shift in what is talked about at local levels, what is put forward, funded, and built, and then to see outcomes.

    b   Differing timelines between the GPS and other non-transport planning that affect mode shift make it difficult to tease out the influence of the GPS specifically.

5   Account for other significant factors impacting mode shift

    a   While out of the scope of this evaluation, other factors, such as housing plans, fuel price changes, and so on, are critical to understanding the influence of the GPS on mode shift.

6   Enabling evaluation and analysis

    a   The tools to enable better analysis will help with evaluation and insights.

    b   Data quality needs to be improved to be a trusted, accessible, and used source of information and allow trends to be observed.

c   It is about the better use of data rather than new and more data.

2.4.3 TIO analyses

An analysis of Regional Land Transport Plan (RLTP) and National Land Transport Plan (NLTP) activities was conducted to assess the impact of GPS investment on mode shift objectively.

2.4.3.1 Prioritisation assessment method

Seven of the seventeen Regional Transport Committees (RTCs) in New Zealand were selected as cases to analyse — Northland, Auckland, Waikato, Bay of Plenty, Wellington, Canterbury, and Otago. These cases represent a range of different transport environments, from large urban areas such as Auckland and Wellington to more rural populations and smaller urban areas such as Northland and Otago.

Waka Kotahi's Transport Investment Online (TIO) tool was selected as the master data source, providing a relatively standard way of capturing information from RLTPs across all regions. TIO was chosen rather than the RLTP documents themselves. While these provided very useful, detailed information on Regional priorities, there was variability in how the data was presented across different authorities and how much detail was provided. Hence, extracting and formatting the necessary information directly from the RLTPs was beyond the scope of this study.

The Waka Kotahi TIO team provided historical manual extracts from each GPS period after consultation. The extracts contained a complete list of activities (either standalone or a phase of a larger programme) submitted to and included in the 2015, 2018, and 2021 RLTPs/NLTPs. In addition, each activity included in the extract had a range of supplementary information that included details of the TIO Activity Class classification, what the activity involved, an assessment against relevant funding criteria, status, cost, funding approvals, and project notes left by staff from Waka Kotahi and the RTC who put it forward.

The analysis aimed to identify patterns in the proportion of activities identified as mode shift promoting and the proportion of cost by activity type over the three GPS periods. Mode shift promoting activities involve work supporting mode shift (such as walking, cycling, scooting, and public transport projects).

The Activity Class category provided in the TIO extract was not a sufficient indication of mode shift promoting activities for two reasons:

- The Activity Classes and the funding allocated to them have changed across each GPS period.
- An activity can be included under a particular class but also have aspects relating to a different class — for example, an activity may be classified as "local roads" but include an active travel component, such as footpath improvements. Advice from practitioners and stakeholders in the orientation workshop emphasised the importance of "local roads" Activity Classes for funding improvements to walking and cycling infrastructure, for example, upgrading footpaths as part of road maintenance.

Relying on the Activity Class categorisation alone could result in under-counting mode shift promoting work undertaken in the NLTP. Consequently, a manual categorisation process was applied to observe changes in the types of activities represented in NLTP over the three periods.

A simplified list of categories was developed to compare mode shift promoting activities with activities that support private vehicle use:

- roading (activities supporting private vehicle use)
- active transport (walking, cycling, micromobility)
- public transport (bus, train, ferry)

Activities could be assigned to more than one category.[5]

The TIO analysis was undertaken in three stages:

1   categorising and weighting proportions of activities and the proportion of costs
2   regional comparisons, and
3   funding approved/committed compared to probable/possible activities allocated in TIO.

- "approved/committed': Activities have funding approved following a council request to initiate the work.
- "possible/probable": Activities are included in the NLTP, but there is a degree of uncertainty about whether they will go ahead.

Categorising and weighting proportions

Activities were categorised in two ways:

1   TIO Activity Class categorisation: An initial Category was applied using only the TIO Activity Classes from GPS 2015, 2018, and 2021. Table 1 shows how the TIO Activity Classes were categorised.

Table 7 Initial categorisation using Activity Classes

TIO Activity Classes	Years included in GPS	Category (new)
Local road improvements	2015, 2018	Roading
Local road maintenance	2015, 2018	
State highway improvements	2015, 2018, 2021	
State highway maintenance	2015, 2018, 2021	
Road safety	2015, 2018	
Road to Zero	2021	
Walking and cycling improvements	2015, 2018	Active transport
Public transport	2015, 2018	Public transport
Rapid transit	2018	

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[5]   Initially, a "multimodal" category was also used to code activities marked as supporting multiple modes (for example, the Mill Road Corridor activity in Auckland included roading upgrades and a cycle lane and bus priority facilities). However, a separate category was not considered necessary as multimodal activities could instead be identified by being assigned multiple categories.

TIO Activity Classes	Years included in GPS	Category (new)
Public transport infrastructure	2021	
Public transport services	2021	
Debt funding	2015, 2018, 2021	Other (uncategorised at this stage)
External funding	2015, 2018, 2021	
Investment management	2015, 2018, 2021	
Regional improvements	2015, 2018, 2021	
Road safety promotions	2015, 2018	

Some Activity Classes could not be directly associated with a particular mode (such as Investment Management). Therefore, these activities were left uncategorised.

2   Mode shift promoting weighted categorisation: A keyword search was conducted in this stage. This was performed to identify:

- activities that supported multiple modes (eg, roading activities that supported active and public transport).
- roading activities that were incorrectly classified (eg, those in the roading Activity Classes related to active or public transport).

This involved searching the list of activities for the following keywords:

- Active transport keywords and phrases: active, walk, pedestrian, cycle, cycling, cyclist, scooter, footpath, cycleway, and shared path.
- Public transport keyword, phrases and acronyms: public transport, passenger transport, public transit, PT, bus, train, rail and ferry.

Every occurrence of each keyword was checked. No further checks were performed for those keywords that matched the category (eg, "train" in the public transport category). Any activity identified by a keyword search not already marked with the corresponding category was assessed to see whether further categorisation was needed. Where an activity was identified as an active or public transport activity in step 1, this classification was left as is (though other categories could still be added). The text containing the identified keyword was reviewed to determine the activity's intent (ie, whether it was mode shift promoting or not). Where necessary, other information about the activity was reviewed to understand its purpose better. (Often, the keyword text did not provide enough information to determine the activity's intent because it is common for activities to include sections of generic text that do not apply specifically to the associated activity).

Activities identified during the keyword review could be marked with categories. For example, if an activity was found to support roading, active transport, and public transport, it was categorised as all three. For activities initially categorised as roading, this could also be removed if found unrelated to the activity.

For an activity to be considered to support a particular mode, it had to contain an element that was directly associated with that mode. For example, if a roading activity stated that it would support buses and cyclists because they could also use the road (along with private vehicles), it would not be categorised as such unless it included a specific active or public transport component such as a cycle path or bus lane. Where a category could not be determined for a particular activity (eg, administrative activities or those with a lack of information), it was marked as 'unknown/other' and included in the "roading/other" category for further analysis – ie, was not a mode shift promoting activity.

Table 8 outlines several examples to demonstrate how the categorisation was carried out.

Table 8 Examples of categorisation

Example activity	TIO Activity Class	Categorisation/rationale
Mt Victoria tunnel duplication (Wellington)	State highway improvements	Categorised as both "roading" and "public transport" since the activity involves the investigation of a second Mt Victoria tunnel, one of which would be used for bus rapid transit, while the other would be used for regular vehicle traffic.
Eastern Pathways project (Waikato)	Walking and cycling improvements	Categorised as both "public transport" and "active transport" since the activity involves the provision of improved public transport facilities and safe cycling routes to local schools.
Medallion Drive upgrade (Auckland)	Local road improvements	Categorised as both "roading" and "active transport" since the activity involves the construction of a new link road along with footpaths and a cycleway.

A final check of all activities was carried out to identify and categorise any remaining activities omitted in steps 1 and 2. At this stage, notes were left throughout the review process, where the coders discussed and agreed upon questions about categorisation to ensure consistency.

All activities considered "high value" (those $500 million or above in cost) were coded by two coding team members and checked as a measure of inter-rater reliability. Of the 43 high value activities, there were two instances where the initial categorisation was changed (indicating a very high 95.3% inter-rater reliability). High value activities were selected for these checks because further analysis was planned for the data by cost per category, therefore, ensuring that these high value activities were categorised correctly reduced the risk of overstating or understating their value.

Next, each category associated with an activity was assigned a weighting value based on how many categories the activity had received in total:

- Three categories — each was assigned a value of ⅓.
- Two categories — each was assigned a value of ½.
- One category — assigned a value of 1.

These values were added to represent the approximate share of the activity associated with each category. For example, if an activity were categorised as roading and public transport, each component would be assigned a value of ½ to indicate that half of the activity supported roading and half supported public transport. Ideally, a more nuanced weighting would be preferred based on the exact share associated with each category. However, because this information was not consistently available, a cruder but pragmatic equal weighting was the most appropriate way to divide the activity between the categories.

The weighting values were then multiplied by the activity's total cost to calculate the share of the cost associated with each category. For example, if an activity cost $100,000 and had two categories, $50,000 would be assigned to each. It was recognised that this approach could place more weight on active modes when this is split between roading and active – this was a limitation. In four cases, the total cost of the activity included a negative value[6]. These negative values were zeroed out to prevent issues with the analysis.

The overall analysis focused on all activities included in the RLTP/NLTP of each GPS period. This included all activities marked in the status column as "included in RLTP", "included in NLTP", "funding approved", "under review — included in RLTP", "under review — included in NLTP", and "under review — funding approved". Draft activities and those included in previous RLTPs and NLTPs were excluded.

Regional comparisons assessed differences in the weighted proportions of activities and costs in each category across seven regions: Northland, Auckland, Waikato, Bay of Plenty, Wellington, Canterbury, and Otago.

For the **prioritisation stages** analysis, the "funding priority" attribute was used to filter the data into two groupings to identify the activities "approved" and "committed" for funding in the NLTP and the activities marked as "possible" or "probable" in the NLTP. Note: this analysis stage did not include RLTP activities (these were deselected using the status column).

Table 9 summarises the number of activities by weighted category included in the RLTP/NLTP for each GPS period and the number of activities with multiple categories.

Table 9 Number and percentage of activities included in RLPT/NLTP by weighted category, and number and percentage of activities with multiple categories

Category	2015 (n)	2015 (%)	2018 (n)	2018 (%)	2021 (n)	2021 (%)
Roading/other	2187	72.2%	1994	66.6%	2052	69.3%
Active transport	379	12.5%	570	19.0%	482	16.3%

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[6]   Negative payments were due to payments back to Waka Kotahi for projects where funding had been front loaded or council buy back of land.

Category	2015 (n)	2015 (%)	2018 (n)	2018 (%)	2021 (n)	2021 (%)
Public transport	462	15.3%	430	14.4%	425	14.4%
Total	**3028**	**100%**	**2994**	**100%**	**2959**	**100%**
Activities with multiple categories	583	19.3%	905	30.2%	549	18.6%

Our initial analysis compared the percentage of activities in each TIO Activity Class (grouped into roading/other, active transport, and public transport — refer to Table 1) with the percentage of activities in each weighted category. This analysis aimed to identify differences between the TIO Activity Classes assigned to activities with the activities categorised by which modes they support (Categorisation).

Figure 9 demonstrates that the percentage of mode shift promoting TIO Activity Classes (active and public transport) relative to roading/other classes was relatively consistent between GPS 2015 and 2018. However, in GPS 2021, both mode shift promoting classes saw a noticeable increase (6%), while the percentage of roading and other classes decreased. The graph also shows how the public transport classes consistently have a larger share of activities than the active transport class, which increased in the 2021 period.
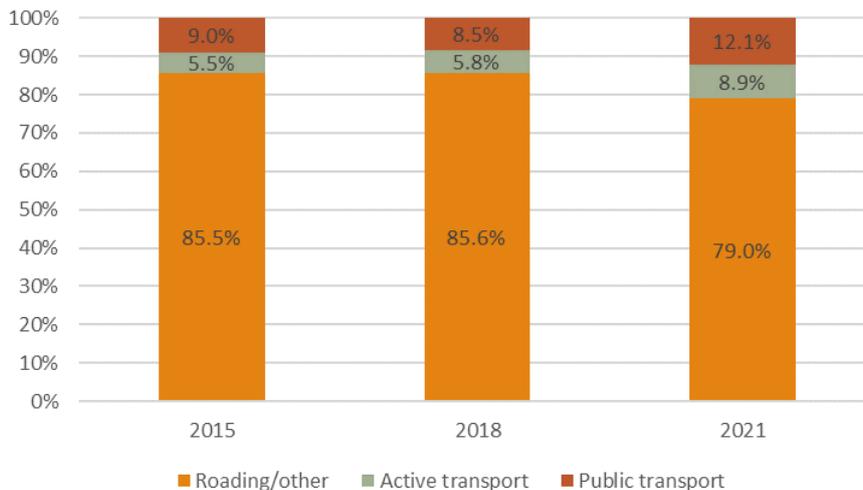
Figure 9 Percentage of activities by TIO Activity Class

A different story can be seen in the percentage of activities by weighted category. The percentage of roading activities was lower after this categorisation than the TIO Activity Class analysis due to the reclassification of roading activities into the accurate (ie, multiple/multimodal categories) and weighting process. The percentage of mode shift promoting categories was greater in 2018 (33.4%) and 2021 (30.7%) compared with 2015 (27.7%), and a larger difference can be seen between 2015 and 2018, where the proportion of mode shift promoting activities increased by 5.6 percentage points. The proportion of public transport activities is relatively consistent across all three periods, while more variation can be seen in the active transport category.
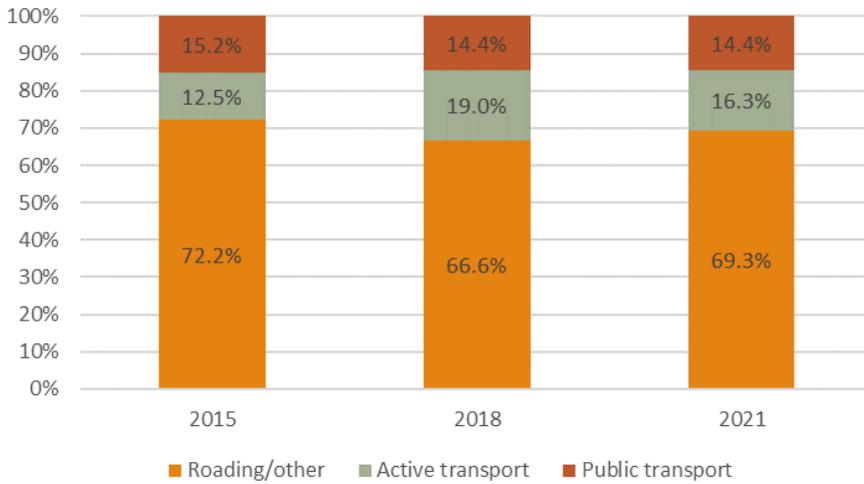
Figure 10 Percentage of activities by weighted category

When looking at the percentage of NLTP cost allocated across the three TIO Activity Class groups, we observed a change across the three GPS periods (Figure 11). Compared with the cost associated with mode shift promoting classes, the percentage of cost for roading/other classes reduced from 80.9% in 2015 to 75.6% in 2018 and 71.1% in 2021. Conversely, the public transport and active transport categories increased over the three periods, with more cost associated with the public transport classes compared with the active transport class (this includes both investment and operating costs).
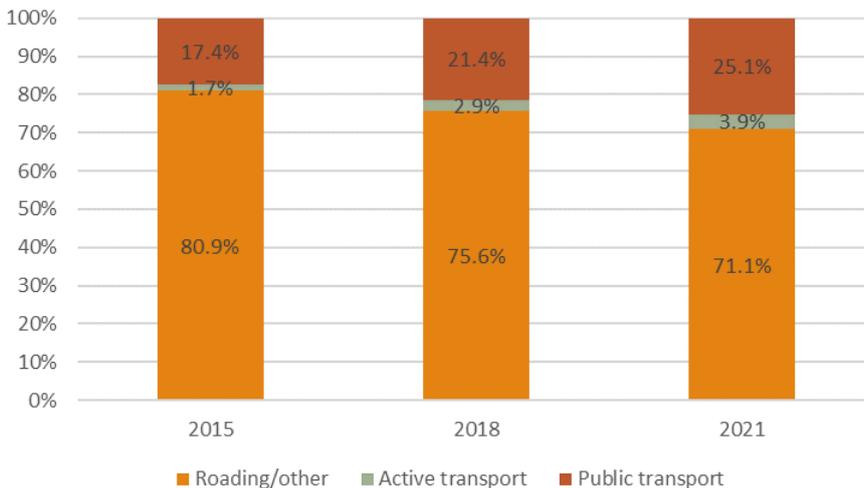
Figure 11 Percentage of cost for activities by TIO Activity Class

The increase in the proportion of cost by weighted category is similar, with 2018 showing slightly more cost associated with mode shift promoting activities than in 2021 (see Figure 12). However, the increase is more apparent when comparing 2015 to 2018. Again, the share of cost allocated to public transport is noticeably more than active transport.
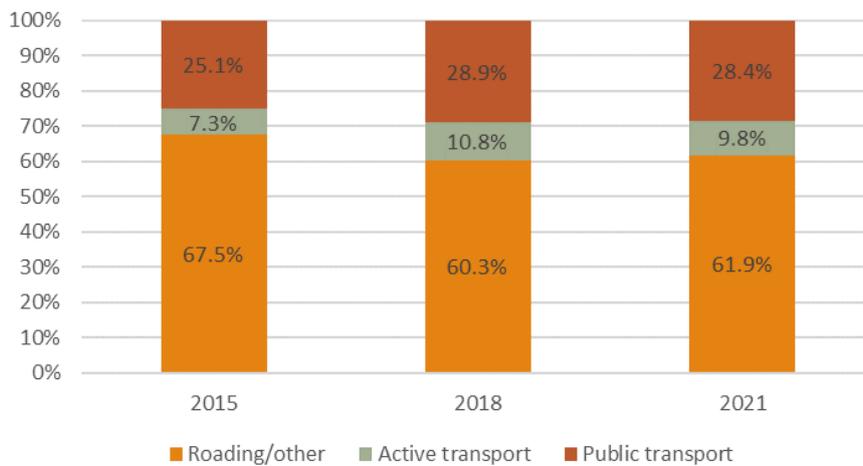
Figure 12 Percentage of cost for activities by weighted category

Overall, there appears to be a gradual rather than a substantial shift in the trend towards mode shift promoting activities. This is seen across the TIO Activity Classes analysis and the weighted categories analysis in the percentage of activities and the percentage of cost. A stronger trend can be seen in the percentage of cost by Activity Class (Figure 11), which shows a continued increase in the cost associated with public transport activities and a decrease in the cost associated with roading activities. However, there are limitations in assessing the percentage of mode shift activities by Activity Class alone. This method does not capture many mode shift promoting activities included under other classes or as components of roading activities. Using the weighted categories provides greater visibility of mode shift promoting activities.

The weighted categories indicate that most of the move to mode shift promoting activities occurred in 2018, while between 2018 and 2021, the proportion of mode shift promoting activities has stayed relatively steady.

Regional comparisons

The graphs in Figure 13 show how the percentage of weighted activities has changed over the years by region. The most noticeable outlier when comparing across the regions is Auckland, which shows a much lower percentage of roading activities (Fig 13a) and a much higher percentage of public transport activities (Fig 13e).

When looking across the three GPS periods, Wellington and Otago show a decrease in the percentage of roading activities and an increase in the percentage of active and public transport activities. All regions aside from Auckland and Canterbury show a decrease in the percentage of roading activities in 2021 compared to 2015. This was consistent with the overall category percentage from 2015 (72.2%) to 2021 (69.3%, see Table 3).

All regions except Canterbury had an increase in the percentage of active transport between 2015–2021. For public transport, all regions except Auckland had an increase in the percentage between 2015–2021.

A similar story can be seen regarding the share of cost across the activity categories by region. Auckland stands out with a lower cost associated with roading and a higher percentage of cost

associated with public transport. Wellington and Otago also show higher percentages of public transport costs. However, active transport cost is similar across all regions.

Wellington and Otago are again noticeable as the two regions which have seen a consistent drop in the percentage of cost for roading and increases in active and public transport costs. Other regions, particularly Northland and Waikato, have seen the percentage of cost for roading, active, and public transport stay consistent.
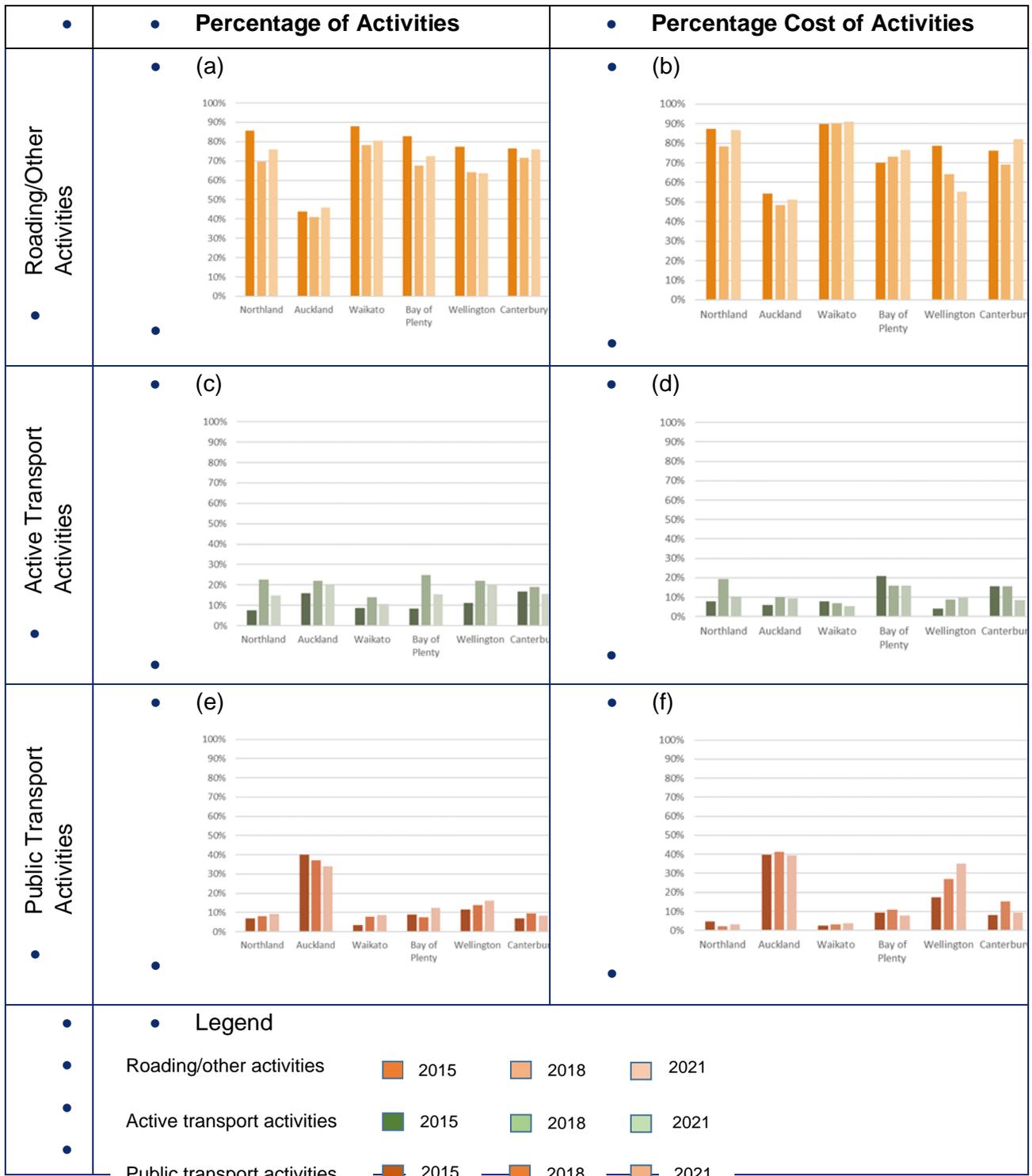
Figure 13 Comparing Regional variation in the percentage of activities and percentage of cost by weighted category

In general, the results from the Regional breakdown reinforce the gradual shift towards mode shift promoting activities. Most regions have seen a drop in the percentage of roading activities and an increase in the percentage of active and public transport activities compared to 2015. However, the results also highlight how different regions are at different stages of their mode shift journey. While

some show consistently strong support for mode shift promoting activities and consistent reductions in roading activities and increases in mode shift promoting activities, other regions show higher percentages of roading activities and less mode shift promoting activities, and less noticeable trends over time. This Regional data can provide insights for the regions to look at patterns over time and provide prompts to review activities when unexpected occur.

Comparing prioritisation stages

Figure 14 shows how the percentage of roading/other and mode shift promoting activities (active and public transport) has changed over time, based on the weighted categories separated into two groups — those that have been approved/committed for funding in the NLTP and those that are probable/possible in the NLTP. Over the three GPS periods, the percentage of roading/other and mode shift promoting activities that have been approved/committed for funding has increased, while the percentage that is probable/possible has decreased.

Across all three periods, roading activities were more likely to be approved for funding than mode shift promoting activities, however, the gap between the two is closing over time. In both types of projects, the percentage approved increased, but this increase was much greater for the active/PT activities compared with the roading/other activities.
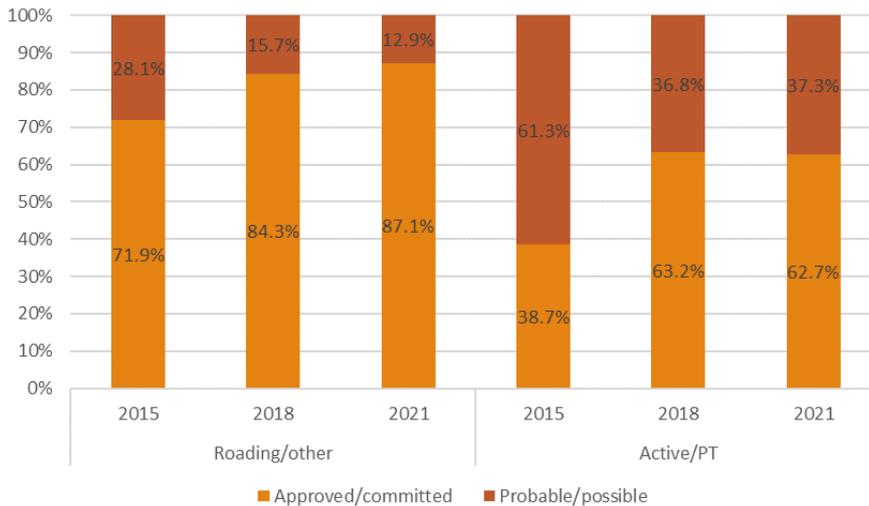
Figure 14 Percentage of activities by weighted category, separated into two groups — approved/committed for funding in the NLTP and probable/possible in the NLTP

Summary

- When used to understand mode shift promoting activities, the TIO Activity Classes can obscure some of these activities. This is because an activity is assigned to one Activity Class while supporting more than one mode. Therefore, weighted categories, as applied in this report, are suggested for improved reporting accuracy on the Activity Class funding.

- When reported by weighted categories, the percentage of mode shift promoting activities increased by 3% between 2015 and 2021.

- In roading and active/PT projects, the approved percentage increased over the three GPS periods. This increase was much greater for the active/PT activities compared with the roading/other activities.

- However, roading/other activities are still more likely to be approved for funding than mode shift promoting activities.

2.4.4 Triangulation of results

Following the completion of all analyses, a triangulation exercise was conducted and determined the following:

- The overall pattern of increasing mode shift promoting activity in the NLTP following the GPS 2018 supports the interview and workshop discussions. While not a substantial change, we observed consistent differences following the introduction of GPS 2018 in the proportion of activities and costs categorised as supporting mode shift and the proportion of mode shift promoting activities staying relatively steady between 2018 and 2021. The small change observed is in line with two observations from in depth enquiry analyses. Firstly, councils' capacities to enable mode shift were constrained by their willingness and ability to co-fund and resource more substantial work, even when NLTP funds were available. Secondly, "turning the ship" will be slow because each GPS period includes previous phases of work. The priorities set in motion by the 2015 GPS will limit what was available for funding in the 2018 GPS (and beyond). However, interviewees explained that the phased nature of many big activities allows new priorities to take precedence, with new phases not progressing to having funding approved.

- The weighting exercise confirmed the interviewee's recommendations to go beyond the formal GPS Activity Classes. This ensured appropriate counting and allowed for reporting of the work undertaken by councils to enable mode shift across their network.

- The Regional variation observed in the TIO analyses was in keeping with what was reported in interviews. Regional projects will respond to specific drivers and needs within Regional and local networks and the national priorities expressed in the GPS.

- A higher proportion of active and public transport activities were categorised in the uncertain "possible/probable" category compared to roading/other activities. The uncertainty of this group of activities may mean they are less likely to be funded and implemented in times of rising costs and funding constraints. From these analyses, it is impossible to ascertain why the difference occurs, however, the 2018 and 2021 periods saw an increase in the proportion of the more certain "approved" categorisation. One reason for the increase may be a growing maturity for mode shift promoting proposals as the sector becomes more proficient at planning, developing, and implementing non-roading projects.

- Indicators of mode shift outcomes were generally more readily available than inputs and output. Still, it was recognised that it would take longer to see a change in outcomes, and the ability to attribute change to the GPS (compared to other factors) will be more difficult. Changes in priorities can be seen in what activities get included and funded through the NLTP, which can provide an early indication of the degree of influence of the GPS.

3. Recommendations for GPS 2024 and reporting — Phase 5

The following recommendations are based on lessons from the above evaluation for developing GPS 2024 and reporting, using the Ministry's Value for Money assessment model key questions illustrated in Figure 15 below.
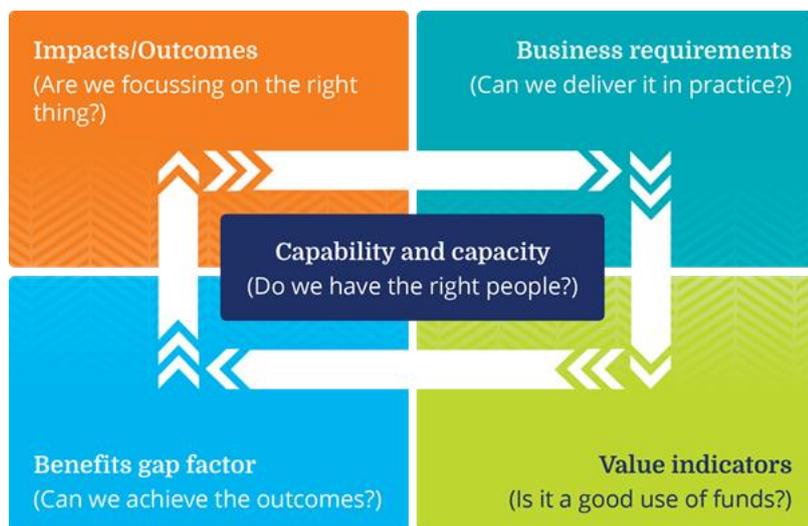
Figure 15 Value for money assessment model key questions

The Value for Money assessment model uses five elements to focus assessment over the whole intervention lifecycle:

1   Impacts/outcomes: defining and articulating outcomes – are we focusing on the right thing?

2   Business requirements: translating outcomes into business requirements – can we deliver it in practice?

3   Value indicators: quantitatively measuring against business requirements – is it a good use of funds?

4   Benefits gap factors: recognising the gaps between outputs and outcomes – can we achieve the outcomes?

5   Capability and capacity: acknowledging the importance of skills, capabilities, and behaviours to delivering results – do we have the right people?

Are we focusing on the right thing?

The GPS 2018 and 2021 have enabled the prioritisation and funding for mode shift promoting activities and have changed the conversation about mode shift as an outcome. But there were concerns expressed in this evaluation that it does not provide the planning and funding mechanism for the broader reaching, complex programmes such as the network and corridor-level interventions needed to deliver substantial mode shift. For example, better integration between land use and transport was identified multiple times in this evaluation as a critical driver of mode shift that is not currently linked as a measure. This is a critical gap, and there will be others that are important to consider when deciding what changes are needed.

Recommendation 1: *Understand and prioritise the underlying determinants and mechanisms of mode shift that can be addressed through transport funding, for example, integrating transport and land use planning.*

Limited visibility of the full range of mode shift promoting activities in the investment cycle and the relative invisibility of active modes in output and outcome monitoring hinders strategic oversight about what changes are made and what changes will deliver the intended mode shift outcomes.

Assessing outcome delivery through Transport Investment Online is challenging due to changes in what is captured over different GPS periods and limited documentation to guide analysis. In addition, the current approach to TIO Activity Classes within a single activity class does not recognise how activities are intended to support multiple modes and outcomes.

Recommendation 2: *Increasing the visibility of all modes within the investment process and in the transport system operation and management. Existing opportunities include*

- a   extending benchmarking of sustainable urban mobility to cover regions and high growth urban areas
- b   continued development with councils of the One Network Framework streets classification and service outcomes and performance measures
- c   allowing for more nuanced ways of categorising and reporting activities in Transport Investment Online, such as Section 2.4.3 of this report, and
- d   incorporating a longitudinal capacity within TIO to evaluate projects over time.

Can we deliver it in practice?

The current prioritisation process to determine what was included in the NLTP was reported to rely heavily on evidence to support a business case, compared to a previous, more strategic approach. Even in larger councils with more capacity to undertake business cases, if evidence was less available for mode shift programmes and activities (such as complex, long term programmes or novel approaches), they were less likely to be identified and funded.

Recommendation 3: *Consider where the appropriate balance lies between the evidence based business case and strategic approaches so that there is sufficient flexibility in prioritisation to facilitate funding a diverse range of mode shift activities.*

GPS funding timelines did not align well with other planning and funding processes that impact mode shift. Without a longer term strategic view, the three year time frame and small marginal funds available for new activities would mean shorter term, piecemeal projects being favoured in the funding process.

Recommendation 4: *Support a higher level focus on investment, strategic planning and monitoring across activities and organisations over longer periods.*

Is it a good use of funds?

A common theme of the in depth enquiry was that most of the NLTF is spent on committed and contracted activities. As a result, despite strong signals in the GPS and aspirations from decision makers, there was relatively little margin for delivering change in what is funded – "turning the ship" was slow.

NLTF was identified as only one part of the transport dollar, limiting the reach of the GPS signals into transport funding. And at an even wider scale, transport funding for mode shift was recognised as needing to be coordinated with other mode shift drivers, such as land use, to optimise the synergies between them.

Recommendation 5: *Greater strategic alignment between transport funds to increase the mode shift benefits from NLTF investment and reduce potential adverse impacts. There is also a need for greater coordination and alignment with current changes in land use priorities and policies.*

Council's ability to contribute funds was constrained by their non-transport spending needs and political buy in, limiting the scale of activities that could be put forward even if NLTF dollars were available.

The current prioritisation and funding methods were considered to favour larger councils and focus on congestion and emission reduction (per the specified investment strategy within GPS 2018). This was evident in the TIO analysis demonstrating a higher proportion of mode shift promoting funding in the largest city, Auckland. However, the range of mode shift promoting activities appropriate in smaller councils was considered narrower. In addition, smaller populations meant the opportunity for large mode shifts was less relative to larger, more urban councils. In this evaluation, mode shift was also valued for improving access to viable transport options and through transport to participation in society, contributing to equitable wellbeing outcomes.

Recommendation 6: *Recognise and value the mode shift benefits of accessibility in Regional and provincial settings, alongside emissions and congestion reduction in urban areas.*

Can we achieve the outcomes?

While there has been an increase in the proportion of mode shift promoting activities since following the 2018 GPS, achieving the outcome of meaningful mode shift will likely require a substantially greater increase in mode shift promoting activities within the NLTP. The current funding model means the operation and maintenance of the current road network take up most of the available NLTF capital, limiting the ability to change direction substantially.

However, because of the typical lag between a GPS and measuring the outcomes from invested activities, the extent of impact will remain unclear for several years. This will depend on the scale of the project. Observing changes on the pathway to outcomes should provide useful information on progress towards mode shift, however, and provide insights on which investments are most likely to achieve the desired mode shift outcome (that is, provide value for money). The SUM benchmarking model could provide the basis for a national approach to monitoring across all investment types: the inputs (such as policies and funding allocations) and outputs (such as spending and infrastructure levels of service) that contribute to the desired outcomes.

Recommendation 7: *Improve the ability to monitor progress towards mode shift within the transport investment and operations system (inputs, outputs, and outcomes) and respond to opportunities to optimise mode shift within the existing network, for example, through temporary changes in infrastructure and responding to emerging trends, such as the impact of Covid on travel patterns and behaviours, electrification of the fleet, remote working and so on. Evaluations of investment need to account for the time lag between investment, construction and use and include measures of inputs and outputs that cover all modes.*

Do we have the right people?

The results from this evaluation suggest the GPS 2018 and 2021 have shifted the conversation about mode shift throughout the transport system in New Zealand. In the end, transport practitioners will "follow the money". For some, the GPS 2018 and 2021 reflected existing ambitions and have allowed greater momentum. For others, the signals and funding allocations have widened the scope of transport activities to include active and public transport. But generally, there is recognition that further change will require going beyond the transport system to a more integrated approach, notably with land use.

Recommendation 8: *Consider how decision making about transport investment can better reflect the integrated transport and land use approach and technical skills required for change (and those involved in other key drivers of mode shift).*

4. Conclusions and next steps

The GPS 2018 signalled a change towards prioritising mode shift that has been widely recognised across the transport sector and can be seen in the 2018 and 2021 NLTPs. The influence of the GPS 2018 was seen in a greater prioritisation for mode shift promoting activities in the composition of activity classes and an increase in the proportion of mode shift promoting activities and costs included in the 2018 and 2021 NLTPs compared to the 2015 NLTP.

The magnitude of the observed post-2018 increase in mode shift promoting activities and costs was small relative to the NLTP. However, several likely factors were suggested. Firstly, the ability to achieve substantial mode shift through the NLTP will likely be constrained by long standing priorities embedded within the network. Secondly, while the GPS 2018 and 2021 signalled a change in investment priorities, the general GPS investment practices and processes may have made it more challenging to enable the range of activities required to achieve a meaningful mode shift in New Zealand. And thirdly, there appear to be barriers to incorporating known non-transport drivers of mode shift in the New Zealand context (such as land use) as part of a smarter, more strategic, and more effective investment in mode shift interventions.

Evaluating the impact of the GPS on investment for mode shift over time was constrained by the available data. For example, the current transport investment data captured from RLTPs and the NLTP limits the ability to undertake the type of longitudinal analyses required to assess the impact of policy on the investment and management of the NLTP. In addition, it was impossible to extract comparable datasets for each GPS period at the time of analysis. Because TIO datasets were not structured in a way that allowed longitudinal analysis, the analyses presented here depended on the previously saved manual extracts. Incorporating a longitudinal capacity into TIO will allow insights to be generated more easily and efficiently, increasing the transparency of transport investment.

Historical ways of measuring modes within the transport system have limited the ability to see all modes equally across the network. The [SUM](#) benchmarking prototype demonstrated the challenges to developing the input, output, and outcome indicators that could be used to assess progress towards sustainable urban mobility in five high growth cities. And the difficulties of sourcing adequate data at the relevant decision making scales and evaluating the influence of the GPS over time also require that data is relevant to the periods of interest. A greater emphasis in the One Network Framework and Land Transport Benefits Framework on monitoring all modes should result in greater visibility and awareness of active and public transport modes alongside private vehicle travel. Along with changes in NLTP activities, the evidence generated from monitoring network outputs and outcomes should help facilitate and better target effective investment in mode shift and optimisation across the network.

A clear message from the in depth enquiry was that assessing the GPS impact on mode shift outcomes (such as changes in public transport and cycling behaviours and private vehicle traffic) will be impossible until the projects invested in since 2018 have been built and embedded within communities. However, evaluating the key points on the pathway between the GPS and mode shift identified in this report will provide valuable insights into how the GPS can influence mode shift outcomes as a lead change in the delivery sequence towards that future state. It will also provide information on how long it takes for the GPS to take effect, considering the planning, investment,

design and construction, and behaviour change lag. Taking advantage of the improved capacity to monitor activities through TIO and enabling better monitoring and benchmarking of all modes within the network would allow for better evaluation of the effectiveness and efficiency of changes to the transport system, feeding back into improved investment decision making. Working with stakeholders will be critical to identify the "low hanging fruit" and high effort, high value indicators needed to monitor not just outcomes and the prioritising and funding steps along the path to mode shift.

Appendix 1 Evaluation Stocktake

1. Stocktake

	National		
	2015	2018	2021
What is a priority?	Strategic priorities		
	Activity Class composition		
	Funding allocation		
What gets funded?	Allocated funds by category (TIO)		
	Number of funded projects by category (TIO)		
			Access to public transport stops (Waka Kotahi StoryMaps)
What gets monitored?	Vehicle Kilometres Travelled (VKT)		
	Transport mode share (Census)		
	Transport mode share (NZ Household Travel Survey)		
	Transport mode share to education (Census)		
			Access to public transport stops (Waka Kotahi StoryMaps)
			CO_2 emissions from land transport (Waka Kotahi StoryMaps)
			Transport-related deaths (ToF)
			Transport-related serious injuries (ToF)
			Time spent travelling by active modes (ToF)
			Household spending on transport (ToF)
			Population with access to frequent public transport services (ToF)
			Access to jobs (ToF)
			Access to the natural environment (ToF)
			People unable to make a beneficial transport journey (ToF)
			Unmet need for GP services due to a lack of transport (ToF)
			Perception of public transport inclusive access (ToF)
			Perceived safety of walking and cycling (ToF)
			Perceived personal safety while using the transport system (ToF)
			Greenhouse gases emitted from the NZ transport system (ToF)
			Mode share of short trips (ToF)
		Significant reduction in deaths and serious injuries (GPS)	
		Cycling and walking is safer (GPS)	
		Metropolitan and high growth urban areas are better connected and accessible (GPS)	
		Increased mode shift from private vehicle trips to walking, cycling, and public transport (GPS)	
		More transport choice (GPS)	
		A more accessible and better-integrated transport network including public transport, walking, and cycling (GPS)	
		Improved land use and transport planning to create more liveable cities (GPS)	
		A reduction in overall single-occupant private vehicle travel in urban areas (GPS)	
		Improved good-quality, fit-for-purpose walking and cycling infrastructure (GPS)	
		Improved real and perceived safety for both pedestrians and cyclists (GPS)	

		Increased proportion of journeys made using public transport and active modes of travel (GPS)	
		Public transport is more accessible and affordable (GPS)	
		Reduce greenhouse gas emissions from transport (GPS)	
		Increased uptake of active travel modes such as walking and cycling to support environmental and public health objectives (GPS)	
		Better informed investment decision-making (GPS)	
		Improved returns (GPS)	
		Enhanced reporting, monitoring, and evaluation of GPS investment (GPS)	
			Mode share for how children travel to/from school (GPS 2021)*
			Number of passenger boardings using urban public transport services (GPS 2021)*
			SuperGold boardings (GPS 2021)*
			Network kilometres of walking and cycling facilities delivered (GPS 2021)*
			Cycling count in urban areas (GPS 2021)*

APPENDIX 1 EVALUATION STOCKTAKE

Regional		
2015	2018	2021
Strategic priorities by region		
Activity Class composition by region		
Funding allocation by region		
Allocated funds by category by region (TIO)		
Number of funded projects by category by region (TIO)		
		Access to public transport stops (Waka Kotahi StoryMaps)
		Public transport concessions (SUM)
		Public transport funding per capita (SUM, Regional Public Transport Plan)
Vehicle Kilometres Travelled (VKT) by region		
Transport mode share by region (Census)		
Transport mode share by region (NZ Household Travel Survey)		
Transport mode share to education by region (Census)		
		Access to public transport stops (Waka Kotahi StoryMaps)
		CO_2 emissions from land transport (Waka Kotahi StoryMaps)
		Public transport patronage (regional councils)
		Average punctuality of bus services (SUM)

	Local		
2015	2018	2021	
Activity Class composition by local area			
Funding allocation by local area			
Specific mode plans (SUM)			
Allocated funds by category by region by local area (TIO)			
Number of funded projects by category by local area (TIO)			
		Access to public transport stops (Waka Kotahi StoryMaps)	
		Footpath maintenance funding per capita (SUM, Annual/Asset Management Plan)	
		Cycleway maintenance funding per capita (SUM, Annual/Asset Management Plan)	
		Kilometres of cycle network (SUM)	
Vehicle Kilometres Travelled (VKT) by local area			
Transport mode share by local area (Census)			
Transport mode share by local area (NZ Household Travel Survey)			
Transport mode share to education by local area (Census)			
		Access to public transport stops (Waka Kotahi StoryMaps)	
		CO_2 emissions from land transport (Waka Kotahi StoryMaps)	
		Transport mode share for trips under 5 km (SUM)	
		Cycling mode share by gender (SUM)	
		Public transport journey time comparison (SUM)	
		Public transport journey cost comparison (SUM)	
		Space dedicated to sustainable urban mobility (SUM)	
		Footpath level of service (SUM)	
		Pedestrian crossings per km^2 (SUM)	
		Walking safety (SUM)	
		Cycling safety (SUM)	

APPENDIX 1 EVALUATION STOCKTAKE

Key
Indicator available at all scales and periods
Indicator available at identified scales and periods, can be calculated for others
Indicator only available at identified scales and periods
Indicator data incomplete in some locations and/or times

* Note 1: GPS 2021 proposed indicators are only included where there is not a comparable measure from GPS 2018 or the ToF Transport Indicators.

Note 2: Both the ToF Transport Indicators and the GPS indicators are noted as being only available at identified scales and periods, however, where possible these may be calculated for other periods (it depends on the indicator whether or not this is possible).

Links to full ToF and GPS indicators:
ToF Transport Indicators
GPS on Land Transport 2018 Annual Report (reporting measures)
GPS on Land Transport 2021 (proposed indicators)

2. Indicators

Indicator	Description	Categories	Information source	Notes
		What is a priority?		
		National		
Strategic priorities stated in the GPS	The strategic priorities stated in the GPS	Qualitative	GPS	
TIO Activity Class composition	Categorised by mode-shift status. Classes where active and public transport modes are visible and/or intended to signal mode-shift are categorised as 'mode shift promoting'. All other classes are categorised as 'other'.	'Mode shift promoting', 'other'	GPS	The visibility of active and public transport modes represents a change in status and priority in the transport system
Funding allocation	Proportion of total NLTF funds allocated to mode shift promoting Activity Classes. Position within the allocation band.	Funding by 'mode shift promoting' and 'other' categories	GPS (Table 3)	
Strategic Performance Expectations (SPEs)	Whether active and public transport modes are a primary or secondary expectation for Waka Kotahi	Number and proportion of SPE measures (primary expectation / secondary expectation)	Waka Kotahi	
		Regional		
Walking, cycling, and PT aspects focused on the RLTP/NLTP	Aspects of walking, cycling, or PT focused on each iteration of RLTP or NLTP (e.g. in the PT space, has the focus changed between improving bus route, more frequent PT, more reliable service, etc)	Qualitative	Regionally-focused Long Term Strategic documents, including Arataki	
		Local		
Specific mode plans	Presence of plans targeting walking, cycling, and public transport (Refer to the 'SUM Policies and Plans' tab for more detail from the Benchmarking Sustainable Urban Mobility report)	Presence of plan	Reported in SUM, data from local authority documents	
		What gets funded?		
		National		
Allocated funds by category	Proportion of total NLTF allocated to mode shift promoting Activity Classes (does not include funding to support active modes within Local Road & State Highway Activity Classes)	'Mode shift promoting', 'other'	TIO	
Number of funded projects by category	Proportion of total NLTP projects allocated to mode shift promoting Activity Classes (does not include funding to support active modes within Local Road & State Highway Activity Classes)	'Mode shift promoting', 'other'	TIO	
Access to public transport stops	Proportion of population within 500m of a public transport stop with a service that runs every 15 minutes and proportion of population within 500m of a public transport stop that runs every 30 minutes	Proportion of population	Waka Kotahi StoryMaps	Transport network is current but based on 2013 Census area units
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APPENDIX 1 EVALUATION STOCKTAKE

Improved land use and transport planning to create more liveable cities	Multiple measures of land use and transport planning	Multiple	GPS 2018 reporting measures
A reduction in overall single-occupant private vehicle travel in urban areas	Kilometres per capita in single-occupancy vehicles in main urban areas	Kilometres per capita	GPS 2018 reporting measures
Improved good-quality, fit-for-purpose walking and cycling infrastructure	Network kilometres of walking and cycling infrastructure delivered	Kilometres of infrastructure	GPS 2018 reporting measures
Improved real and perceived safety for both pedestrians and cyclists	Pedestrian and cyclist injuries and perceived safety of walking and cycling	Number of injuries + perceived safety	GPS 2018 reporting measures
Increased proportion of journeys made using public transport and active modes of travel	Trips by walking, cycling, and public transport	Percentage by mode	GPS 2018 reporting measures
Public transport is more accessible and affordable	Access to public transport and household spending on public transport	Proportion of population + spending by income	GPS 2018 reporting measures
Reduce greenhouse gas emissions from transport	Kilotonnes of CO_2 from transport (by mode)	Kilotonnes of CO_2	GPS 2018 reporting measures
Increased uptake of active travel modes such as walking and cycling to support environmental and public health objectives	Trips by walking and cycling	Percentage by mode	GPS 2018 reporting measures
Better informed investment decision-making	Investment benefits by mode	Investment benefits	GPS 2018 reporting measures
Improved returns	Investment returns by mode	Investment returns	GPS 2018 reporting measures
Enhanced reporting, monitoring, and evaluation of GPS investment	Monitoring, reporting, and evaluation of GPS	Multiple	GPS 2018 reporting measures
Mode share for how children travel to/from school	School trips by mode	Percentage by mode	GPS 2021 proposed indicators
Number of passenger boardings using urban public transport services	Number of passenger boardings on urban public transport services	Passenger boardings	GPS 2021 proposed indicators
SuperGold boardings	Number of SuperGold public transport boardings	Passenger boardings	GPS 2021 proposed indicators
Network kilometres of walking and cycling facilities delivered	Kilometres of walking and cycling facilities	Network kilometres	GPS 2021 proposed indicators

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Better informed investment decision-making	Investment benefits by mode	Investment benefits	GPS 2018 reporting measures
Improved returns	Investment returns by mode	Investment returns	GPS 2018 reporting measures
Enhanced reporting, monitoring, and evaluation of GPS investment	Monitoring, reporting, and evaluation of GPS	Multiple	GPS 2018 reporting measures
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3. Activity Classes

Mapping activity classes across GPS periods

2015	2018	2021	Activity class categories
State highway improvements	State highway improvements	State highway improvements	Mode shift promoting
State highway maintenance	State highway maintenance	State highway maintenance	Roading
Local road improvements	Local road improvements	Local road improvements	Other
Local road maintenance	Local road maintenance	Local road maintenance	
Public transport	Public transport	Public Transport services	
Walking and cycling improvements	Walking and cycling improvements	Walking and cycling improvements	
Regional improvements	Regional improvements	Road to Zero	
Road safety promotion	Promotion of road safety and demand management	Public Transport infrastructure	
Road policing	Road policing	Rail network	
Investment management	Rapid transit	Coastal shipping	
	Transitional rail	Investment management	
	Investment management		

APPENDIX 1 EVALUATION STOCKTAKE

4. Sum

Walking, cycling and public transport plans

	AUCKLAND	HAMILTON	TAURANGA	WELLINGTON	CHRISTCHURCH
WALKING PLAN	**Auckland Plan 2050**	**Access Hamilton Strategy** – Council have advised that a new Active Travel Plan will be created as part of the new Access Hamilton Strategy	**Tauranga Transport Strategy 2012-2042**	**Wellington City Walking Policy** (currently in the process of being updated)	**Christchurch Transport Strategic Plan 2012-2042** (currently in the process of being updated)
Indicators	✓ **Yes** - Indicators are quite broad and look at multiple modes	✗ **Unable to confirm** - It remains to be seen whether the new plan will include any indicators or targets.	✗ No	✓ Yes - Indicators are quite broad and look at multiple modes	✓ Yes - Indicators are quite broad and look at multiple modes
Targets	✗ No	✗ No	✗ No	✗ **Somewhat** - the Wellington Annual Plan includes some indicators relating to walking.	✗ **Not currently** - Christchurch City Council have advised that specific targets will be included in the new plan.
Is performance monitored and reported on?	✓ Yes	✗ Unclear	✗ Not currently	✓ Somewhat	✓ Yes
CYCLING PLAN	**Auckland Plan 2050**	**Hamilton Biking Plan 2015-2045**	**Tauranga Cycle Plan**	**Wellington City Cycling Policy**	**Included as part of the Christchurch Transport Strategic Plan 2012-2042** (currently in the process of being updated)
Indicators	✓ **Yes** - Indicators are quite broad and look at multiple modes	✓ Yes	✓ Yes	✓ Yes	✓ Yes
Targets	✗ **No**	✗ **No** - Except for the user satisfaction indicator.	✗ No	✗ No	✗ **Not currently** - Christchurch City Council have advised that specific targets will be included in the new plan.
Is performance monitored and reported on?	✓ Yes	✗ No	✗ Not currently	✓ Somewhat	✓ Somewhat
PUBLIC TRANSPORT PLAN	**Auckland Regional Public Transport Plan 2018-2028**	**Waikato Regional Public Transport Plan 2018-2028**	**Bay of Plenty Regional Public Transport Plan 2019**	**Wellington Regional Public Transport Plan**, soon to be replaced by the Wellington Regional Public Transport Plan 2021-2031 (currently in draft).	**Canterbury Regional Public Transport Plan 2018-2028**
Indicators	✓ Yes	✓ Yes	✓ Yes	✗ **Not currently** - The new Wellington Regional Public Transport Plan 2021-2031 (currently in draft) includes a set of indicators to measure performance, all of which include specific targets.	✓ Yes
Targets	✓ **Yes** - Plan includes expected outcomes for 2021.	✗ **No** - Except for the user satisfaction indicator.	✓ Yes	✗ Not currently	✓ Yes
Is performance monitored and reported on?	✓ Yes	✓ Yes	✓ Yes	✗ Not currently	✓ Yes

An evaluation of modal shift
in the Government Policy
Statement (GPS) on land
transport

—

He arotake i te neke aratau i te
Tauākī Tikanga Here Kāwanatanga
mō te waka whenua (GPS)

transport.govt.nz

Te Kāwanatanga o Aotearoa
New Zealand Government