

# State Highway Asset Strategy

The 10-year asset management direction for state highways 2024-2034

Transport Services

March 2025

Version 1.0



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## Foreword Chief Executive

**Te kāpehu - Our Compass sets out NZTA's place and aspirations within the wider land transport system. It establishes the direction for what we want to achieve, how we'll go about this, and why we're here. The vision of Te kāpehu is of a land transport system connecting people, products and places for a thriving New Zealand.**

**This 10-year state highway asset management strategy sets out how we will improve our state highway activities, so we execute our roles more effectively and efficiently, when delivering the contribution sought by Arataki, our 30 Year Plan.**

This strategy describes how we will improve the ways we:

- target state highway activity investment
- plan, design and deliver the right activities to deliver access for people and products while reducing harm to people and the environment,
- how we'll work with others on this journey.



Brett Gliddon  
Chief Executive

The strategy addresses the priorities of the 2024-2034 Government Policy Statement (GPS) on land transport and the 4 strategic priorities, kāhui whetū - our guiding stars, identified in Te kāpehu, by targeting:

- Eke panuku - delivery excellence, where we'll seek to deliver our core business well and strive to continually improve
- reliance on Auahatanga - accelerating digital, to deliver insights from our data and transform the way we go about our business with our partners and suppliers in a digital age
- business transformation, so we're fit for the future, able to make the changes required to deliver on the ambition of Arataki, and reflect Pae tawhiti - future focus
- Pou herenga tangata - culture and leadership, perhaps most importantly, this State Highway Asset Strategy is a signal of the intent of NZTA regarding the need to change and develop our culture, and lead practice change to deliver markedly better outcomes for New Zealand.

I welcome this strategy and the impact its delivery will make. Successful implementation will mean:

- improved productivity so we are better able to deliver on the ambition of Arataki
- targeted procurement improvements, so suppliers are incentivised to deliver on our goals
- overall asset management improvements relevant across all road controlling authorities (RCAs) and suppliers
- increased personnel capability, so each persons work will be richer and their expertise will be better employed by using digital technology to fluently provide information to decision makers
- customer focused activities are enabled to be planned and delivered together across the business.

## Foreword National Manager, Portfolio and Standards

**NZTA Transport Services has a proud history of delivering transport solutions for New Zealand. However, we must step up the scale and pace of our activities if we are to deliver against the aspiration of Arataki - Our 30 Year Plan. We must improve our productivity, work quality, procurement and asset management practices to improve the value for money of public funds invested through our business.**

The state highway network is the largest public social asset in New Zealand, and our programme of operations, maintenance and improvement activities are one of the largest in the country. The network provides a connection between people and goods, region to region across New Zealand, to key destinations, towns, cities, ports, freight and transit hubs. Although only 12% of the total land transport system, state highways carry 55% of vehicle traffic, 75% of road freight and about 12% of cyclists through the network. The state highway network provides the only land access to many regions and towns.

It is becoming clear that New Zealand has a large infrastructure deficit, so we must ensure that every dollar we spend is used as effectively as possible. We need to maintain service levels and conduct our activities more productively and efficiently than ever before.

To fulfil our role we must lead sector change to improve productivity and the value for money of all investment. We must lead this change right through the lifecycle from integrated planning that delivers the best sequence and mix of operational activities, small works and large projects in collaboration with our partners; through to the ongoing network operations and infrastructure maintenance to sustain the service levels for the least long-term cost.

This strategy sets out our 10-year vision for the services we provide, and the way our Transport Services team intends to add the maximum value to New Zealand with its implementation. The strategy sets out a high-level improvement plan that describes the activities that we will develop as we prepare each business plan to enable us to perform at the level we've targeted. This is version 1 of the strategy. We expect to monitor its success and continue to develop and adapt it as we progress forward in the next few years. This will be a reference point for all of our future activity planning.



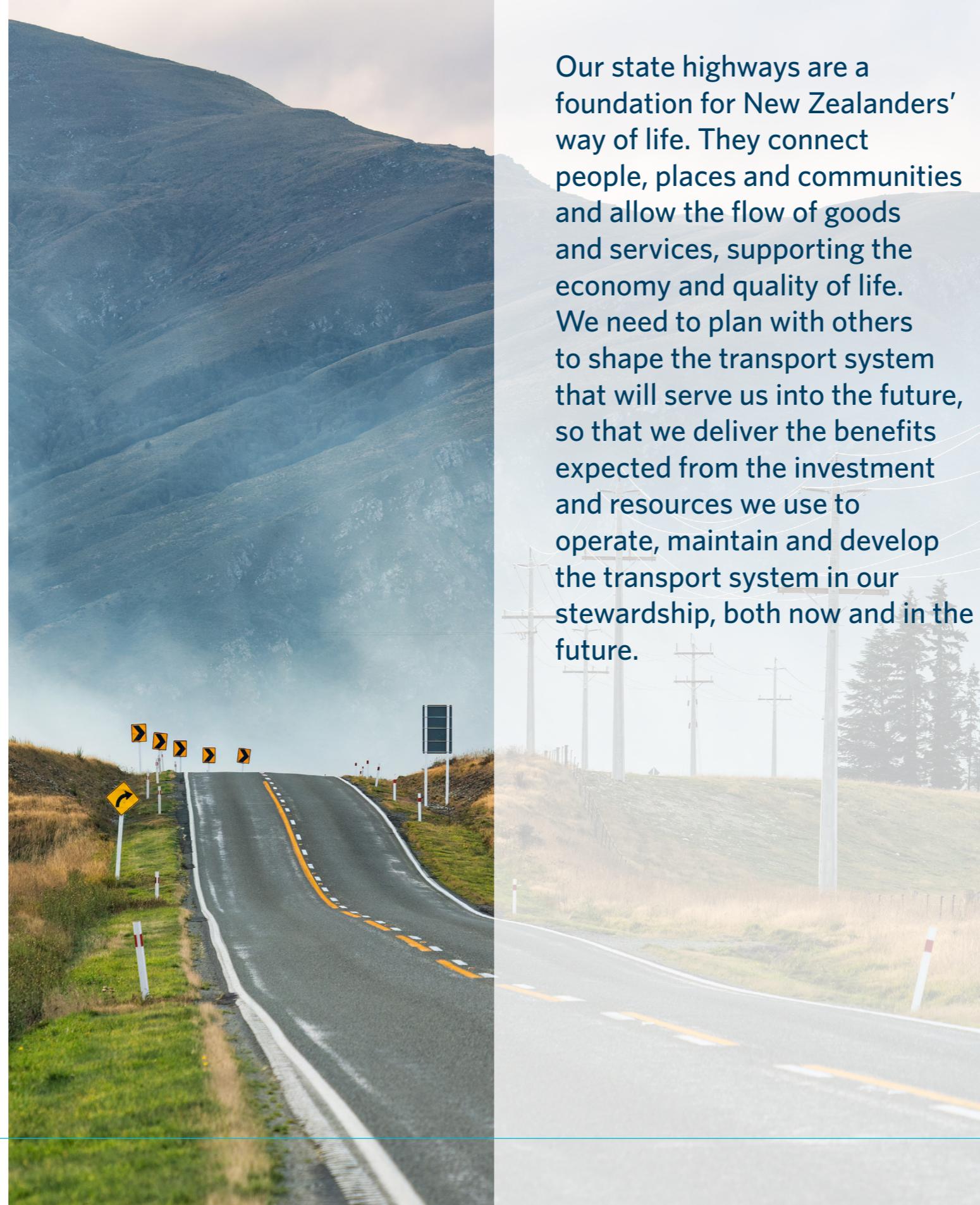
Cate Quinn  
National Manager Portfolio and Standards

# Purpose

This strategy sets out the guiding asset management practice focus areas for management of the state highway portfolio and all of its assets between 2024 and 2034, in order to return maximum value for New Zealand. This strategy sets out the improvements we expect to make over the next 10 years, so we continue to be trusted with the resources and investment required to provide the services now and for the future.

This strategy:

- outlines the context in which NZ Transport Agency Waka Kotahi (NZTA) operates, and its organisational goals and objectives
- summarises the assets managed and operated by NZTA to deliver services
- presents NZTA's asset management policy
- describes how NZTA will implement this policy
- defines NZTA's asset management objectives
- details how these objectives will be achieved, including roles and responsibilities, principal risks and their management and decision-making criteria
- provides guidance for activity management plans and strategic planning documents
- is intended to meet the requirements of ISO55001 for a strategic asset management plan, and aligns with the International Infrastructure Management Manual (IIMM).



# Operating Context

Our state highways are a foundation for New Zealanders' way of life. They connect people, places and communities and allow the flow of goods and services, supporting the economy and quality of life. We need to plan with others to shape the transport system that will serve us into the future, so that we deliver the benefits expected from the investment and resources we use to operate, maintain and develop the transport system in our stewardship, both now and in the future.

## About NZTA

The Land Transport Management Act 2003 (LTMA) established NZTA as the Road Controlling Authority (RCA) for state highways. The Government Roading Powers Act 1989 describes how state highways can and should be managed, in conjunction with other Acts (for example, the Public Works Act 1981 and Resource Management Act 1991).

Under the LTMA, our primary objective is to contribute to an effective, efficient and safe land transport system in the public interest, ensuring that, through our functions, we exhibit a sense of social and environmental responsibility; seek value for money, and transparently account for revenue and expenditure. Sound management of the planning, funding, design, supervision, construction, maintenance, and operation of our state highway system is fundamental to delivering on our infrastructure, planning and investment management function.

The Transport Services business group within NZTA is responsible for leading the RCA functions for state highways on behalf of NZTA. Our strategic context is set by legislation, Government direction, and Te kāpehu (our compass), and its strategic directions and priorities. Arataki – our 30 Year Plan, provides a view of the transport system required to deliver government direction. It describes the activities that we and partner agencies need to undertake to achieve that view.

## New Zealand's state highways at a glance (2024)

**11,072km** 

of state highways

**The state highway system supports economic growth and social well-being** 

and is critical in connecting our regions and communities

**\$85.3 Billion**

of State Highway Assets<sup>1</sup>

 **Land**  
35,081 Ha  
\$23.0b

 **Formation**  
125,220,286m<sup>2</sup>  
\$20.6b

 **Drainage**  
2,346km  
\$3.2b

 **Tunnels**  
22 tunnels  
\$5.5b

 **Pavement base course**  
40,462,729m<sup>3</sup>  
\$11.6b

 **Pavement surface**  
115,539,294m<sup>2</sup>  
\$2.3b

 **Culverts and subways**  
1,631  
\$1.0b

 **Bridges**  
2,786  
\$15.4b

 **Traffic facilities**  
11,716,062  
\$2.2b

 **Supporting assets**  
15,344km subsurface water channels

2,807km railings and barriers

196,076 signs

786,568m<sup>2</sup> retaining walls

\$514m of miscellaneous assets



**People, goods and services, as well as some utilities**

are connected by the state highway system

**350km** 

more lane kms than 5 years ago

<sup>1</sup> Optimised Depreciated Replacement Value 2023/24

## How customers experience the network<sup>2</sup>

Following a decline in the previous (July 2022 to June 2023) 12-month period, there has been an increase in user satisfaction, with 53% of our customers considering their last trip to be very good, and only 5% considering the trip to be bad.

### Maintenance

Following a decrease during July 2021 to June 2022, user satisfaction has improved for all factors within maintenance.

Although improving, surface condition and surface water (when encountered) remain moderately rated. Potholes continue to be an issue (affecting 13% of all users).

Although only 13% encountered surface water, it was an issue for one in 5 who did.

Satisfaction remains high for the cleanliness of the state highway routes and for the management of vegetation, grass and trees.

### Roadworks

Roadworks were encountered by 2 in 5 users (41%). Roadworks on state highways continue to be well managed for signage, layout, safety and interactions with staff. Surface smoothness, the amount of roadworks encountered on a trip, and the time taken waiting at roadworks, continue to have lower user satisfaction ratings.

### Road closures/detours

Fourteen percent encountered closures, typically with detours. Satisfaction remains at lower levels for the amount of signage warning in advance, the surface smoothness of the detour route and the time taken along it.

### Rest areas, laybys or picnic areas

These were well rated for signage, cleanliness, and both ease and safety of entry by the 10% that stopped. Ratings have increased following decline in the previous 12-months.

### Signs

All types of signs were generally considered helpful, with ratings for those not helpful ranging from 6% to 14%.



**Feeling of calm:** Trips remain well rated for the feeling of calm both before and during the trip. For those users who identified as not feeling calm prior to the trip, reasons included concerns about traffic, other drivers, road conditions and weather.

**Feeling of safety:** The feeling of safety remains well rated. Among those users feeling unsafe, poor road surface ratings have decreased slightly as a concern although it remains common. Other main concerns were amount of room, traffic speed and heavy traffic.

**Night travel:** Following a decrease, user satisfaction has improved for travel at night. Eleven percent considered it difficult, with reasons including inadequate lighting and poor road conditions, such as roadworks.

**Travel time:** Many trips met time expectations, with those longer than expected (19%) balanced by those shorter than expected (18%). Although user satisfaction has improved with the length of time taken, there is room to improve the low to moderate ratings among many users.

**Value for money:** Perceptions have improved with regards to value for money. However, 12% considered their trip poor value for money with reasons including the cost of petrol, roading charges, travel delays increasing costs, and the impact of poor road conditions on vehicles.



### **Information sources**

A wide range of information sources were used, with Google Maps the most common. Most sources were reasonably rated for usefulness. When not considered useful, common issues were inaccurate or out of date information, and difficulties with use.



### **Customer service**

Five percent of survey participants had contacted NZTA or a contractor about a state highway issue in the past 12 months. After decreasing in the previous 12-month period, satisfaction has improved for both customer service and outcomes, although ratings remain moderate.

<sup>2</sup> State Highway User Survey Jul-2023 to Jun-2024 report (Verian), 95% confidence level.

## Condition and performance of our state highway assets 2023/24

We report on the performance of our assets in our annual reports using the following 4 indicators.

- **Asset Sustainability Ratio (Figure 1).** The asset sustainability ratio is a high-level indication of the sustainability of investment in relation to asset renewal. It assesses the relationship between expenditure on asset renewals relative to depreciation, approximating the extent to which existing state highway assets are being renewed or replaced as they reach the end of their useful lives and wear out. Although the ratio is a long-term indicator of over-investment or under-investment, it does not necessarily follow that a low asset sustainability ratio over a fixed period is evidence of under-investment.

Analysis of the ratio alongside trend information indicates:

- ratios of less than 100% for all asset types except pavement (base)
- significant increase for pavement (base), partly due to substantial renewal expenditure on this asset type
- decrease for pavement (surfacing)
- other asset types have more modest changes

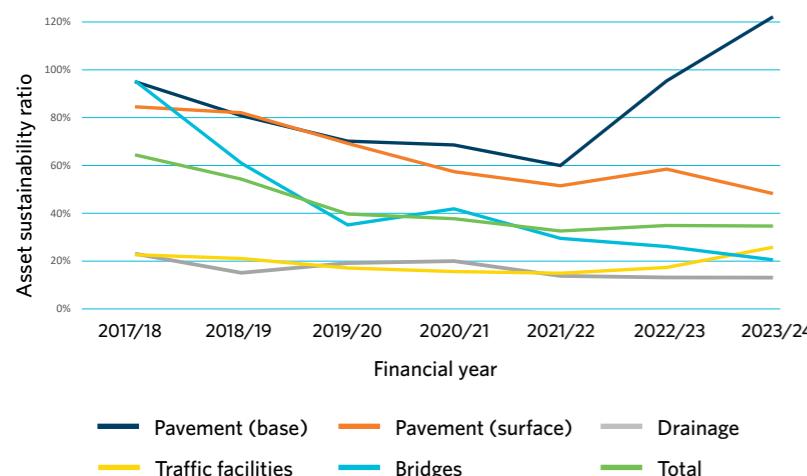


Figure 1. Asset sustainability ratio (Annual Report 23/24)

- **Proportion of the state highway network that meets minimum asset condition requirements (Figure 2).** The overall state highway condition has been declining in recent years, and there is a variation in conditions between regions. In particular, the Central Waikato, Taranaki, Northland and Gisborne regions have a high proportion of 100-metre sections of highway that are in very poor condition, collectively making up 10% of the national total of all very poor segments.

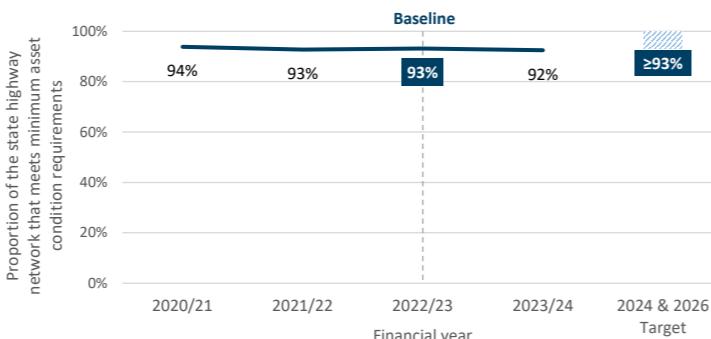


Figure 2. Proportion of the state highway network that meets minimum asset condition requirements (Annual Report 23/24)

- **Number of bridges with restrictions rated as high priority.** Short, or long-term restrictions are put in place on state highway bridges because of deteriorating condition, damage caused by illegal overloading, or where they were originally designed for lower load limits than current general access limits. While there has been steady progress on removing bridge restrictions in the last year, the number of bridges with restrictions rated as high priority has remained reasonably steady.

- **Proportion of unplanned road closures resolved within standard timeframes (Figure 3).** The ability of the land transport system to withstand, absorb, adapt, respond and recover from unplanned disruptive events has improved since 2020, with 64% of closures from weather related events and 89% of other events being resolved within standard timeframes.

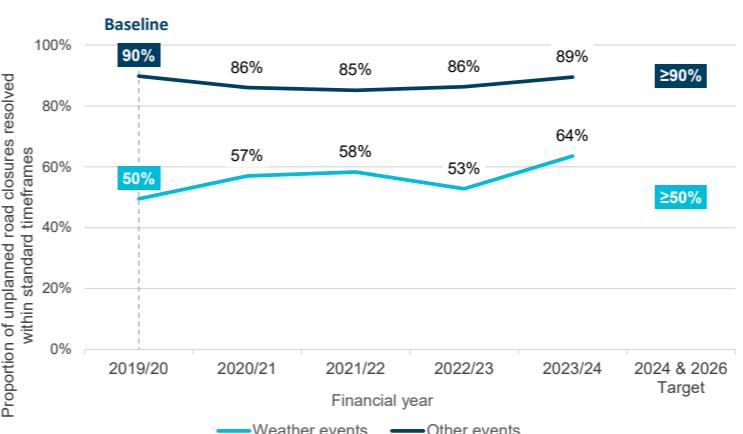
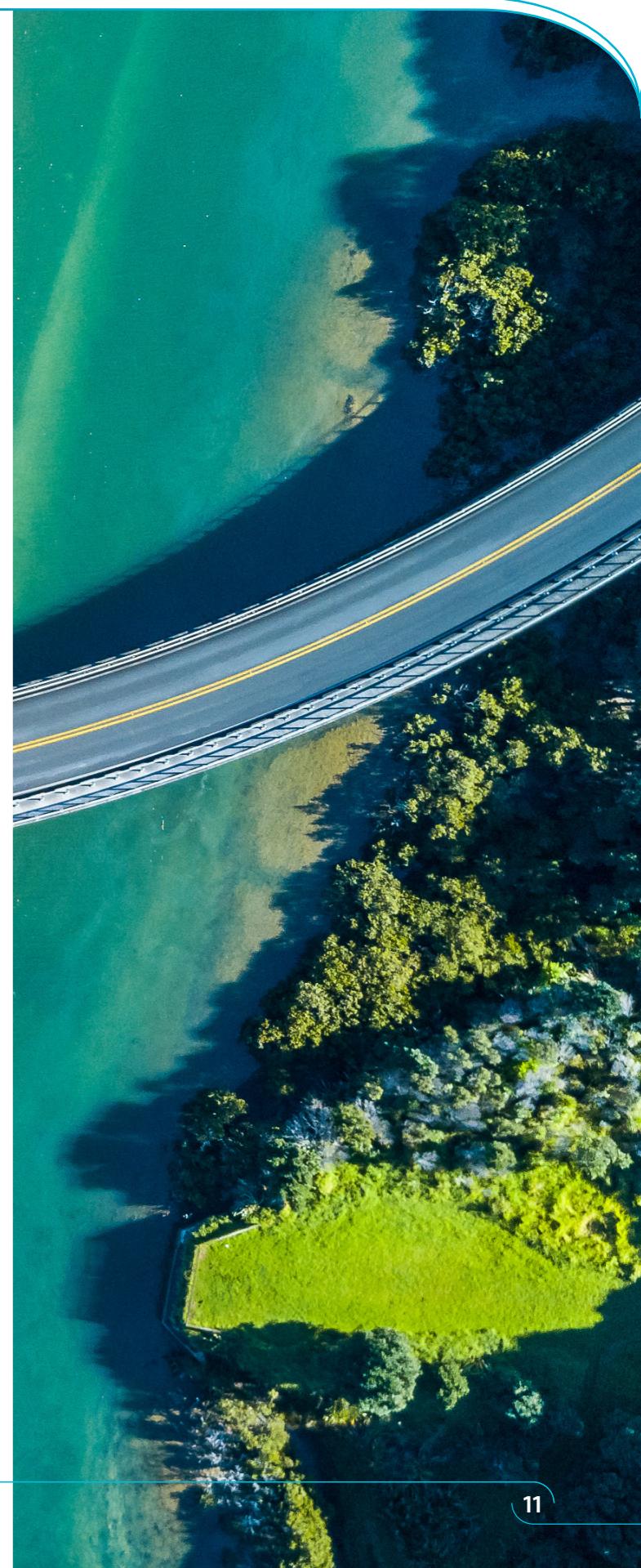


Figure 3. Proportion of unplanned road closures resolved within standard timeframes (Annual Report 23/24)



## Strategic context

Our goals for state highways, as we perform our Road Controlling Authority (RCA) function, are guided by our strategic environment so that we deliver our work programmes to support the government's strategic direction and priorities, and respond to Te kāpehu - our compass, and kāhui whetū - our guiding stars. Our operating context and goals that drive and control the provision of customer services are broadly similar to those of our partner RCA's. Our strategy is therefore driven by the external strategic framework.

### External strategic framework

Although NZTA has independent functions that separate us from central government, we are a Crown entity that is required to deliver on the government's desired outcomes and direction for the land transport system. This governs our organisation's direction, priorities and focus which ultimately shapes the outcomes and results to be delivered through our asset management. The government's strategic direction as established in long-term outcomes, strategies, policies and current priorities for the transport system is set out in legislation and government policy.

**Legislation.** Legislation governs what we do and how we do it, it determines our roles and provides the authority for us to act. Other forms of legislation such as regulations and rules set out our powers for a range of our activities, directives such as Cabinet Office Circular CO(23)9 which details our requirements for investment and asset management.

- National Policies, Strategies and Frameworks.** Other government policies and initiatives influence our activities, particularly the:

- Transport Outcomes Framework. This provides the long-term strategic outcomes to be achieved by New Zealand's transport system.
- Government Policy Statement. The GPS 2024 outlines the Government's land transport investment priorities, and guides expenditure of over \$7.5 billion from the National Land Transport Fund (NLTF), and around \$1.9 billion from local government, each year. GPS 2024 sets the balance between investing in new projects and ensuring we maintain and repair our existing infrastructure. To ensure we add the most value for New Zealand the GPS focuses on 4 key strategic priorities:
  1. Economic Growth and Productivity. Efficient investment in our land transport system connects people and freight quickly and safely, supporting economic growth and creating social and economic opportunities including access to land for housing growth.
  2. Increased Maintenance and Resilience. New Zealand needs a transport system that is resilient to the impacts of weather events and other natural disasters. Increasing maintenance and resilience enables us to effectively manage and reduce current and future risk, and adapt to these challenges.
  3. Safety. A safe transport system is critically important. Road deaths and serious injuries place a substantial burden on families, society, the economy, and the health sector each year, with significant direct costs incurred by the Accident Compensation Corporation (ACC) and other parties.
  4. Value for Money. The Government wants to realise greater value from the financial investment made into our land transport system, and this is why value for money is a strategic priority guiding all transport investments under this GPS.

### Internal strategic framework

NZTA's organisational strategic planning sets the long-term goals and vision for which asset management informs and responds to. This planning is heavily influenced by central government direction.

- Statement of Intent (SOI) - responds to the GPS and other influences on the transport sector to reaffirm our commitment to meeting current and future challenges for the transport system and refreshes our strategy to align with priorities for New Zealand.
- Statement of Performance Expectations (SPE) - sets out how we will measure the financial and non-financial performance of our output classes (the activities we deliver and invest in), and forecasts financial statements. Our longer-term strategy and the outcomes we are working towards are described in our Statement of Intent.
- Te kāpehu, NZTA's strategic framework - our compass. This focuses on how we deliver, including our roles, the system outcomes we want to achieve, and the values and behaviours expected of our people. It describes our kāhui whetū - our guiding stars: eke panuku - delivery excellence, pae tawhiti - future focus, pou herenga tangata - culture and leadership, auahatangata - accelerating digital.
- Arataki, our 30 Year Plan. This document sets out our response, as well as those of the wider organisation and its partners to successfully deliver on the government and our organisation's strategies and requirements. It sets our direction, priorities and focus for asset management, and the desired outcomes and results to be delivered through our organisation. It defines our understanding of service capacity, demand and performance achievement, which drives mid-term planning and development of options.



Our vision for 2035 is that we:

1. Are focused on delivering our core business, do that well and strive to improve. We are an exemplar of an efficient and effective asset management agency.
2. Deliver the benefits expected from the portfolio of our activities at the agreed time and cost.
3. Are clear on why we propose to undertake the identified activities, and the resources required to achieve the vision for the transport system.

## Stakeholder needs and expectations

Stakeholder needs and expectations influence NZTA's strategic direction and subsequent levels of service. It's essential the land transport investment decisions we make are targeted to provide the best outcomes for all New Zealanders. Listening to our customers is therefore an important part of the planning and delivery process, beginning with early engagement before projects start, and continuing through the design, delivery, maintenance, operations and revocation phases.

Customers, communities, stakeholders and visitors all provide us with feedback, requests, opinions and complaints that we, and our partners, respond to and learn from. We use the following tools to gain insights from our customers:

- customer calls and emails
- social media
- State Highway User Survey
- journey experience monitor
- cycling and walking survey
- Māori engagement research survey
- NZ household travel survey.

These are described in more detail in the State Highway Activity Management Plan (SHAMP).

The needs and expectations of our partners and stakeholders are summarised in the following tables:

**Table 1.** Our partners and their needs and expectations

Partner	Needs and expectations
Tāngata whenua including whānau, hapū and iwi	<ul style="list-style-type: none"> <li>▪ Implementing tāngata whenua knowledge within the management of the state highway network enhances NZTA's outcomes for New Zealand</li> <li>▪ Greater awareness and understanding of the significance of tāngata whenua and their role as kaitiaki</li> <li>▪ Mechanisms for participation in governance, management, planning and implementation of the state highway network, to ensure tāngata whenua perspectives, values and knowledge are integrated.</li> </ul>

**Table 2.** Our stakeholders and their needs and expectations

Stakeholder	Needs and expectations
Customers and road users	<ul style="list-style-type: none"> <li>▪ Swift and reliable access to destinations for people and goods</li> <li>▪ A choice of transport modes</li> <li>▪ Safe and sustainable services and infrastructure.</li> </ul>
Ministry of Transport	<ul style="list-style-type: none"> <li>▪ Alignment with government direction.</li> </ul>
Treasury	<ul style="list-style-type: none"> <li>▪ Transparent, prudent and sustainable investment.</li> </ul>
Local government	<ul style="list-style-type: none"> <li>▪ As a collective of local Road Controlling Authorities, local government seeks clear direction, transparent and streamlined processes and funding support</li> <li>▪ Communication about existing and future infrastructure resource needs</li> <li>▪ Contribution to regional initiatives and compliance with consents.</li> </ul>
Communities, businesses and taxpayers	<ul style="list-style-type: none"> <li>▪ Efficient infrastructure that supports economic prosperity and quality of life.</li> </ul>
Landowners	<ul style="list-style-type: none"> <li>▪ Access</li> <li>▪ On a case by case basis where they may be affected by infrastructure development.</li> </ul>

## External and internal challenges and issues

Key pressures and the high-level challenges we are facing which may impact our ability to achieve our asset management objectives are outlined below, along with our strategic responses to these.

The specific and more detailed challenges we face in delivering the transport outcomes are presented in the State Highway Activity Management Plan (SHAMP).

### Arataki strategic drivers

The land transport system will evolve substantially over the next 30 years. While predicting the future is impossible, we will use trends and influences to understand how the future may be different from today.

There are 6 key drivers identified in Arataki 2023 that shape the future of the land transport system. These sit alongside the network challenges that are impacting customer service levels and drive our response to shape the core programme.

The 6 key drivers that will shape and change the future land transport system are:

1. demographic change
2. climate change
3. changing travel patterns
4. technology and data
5. changing economic structure
6. funding and financing challenges.

Arataki 2023 is aligned with NZTA's Te kāpehu Statement of Intent 2021 - 2026. It informs our work and shapes how we partner with others across a variety of measures, from policy and regulation, through to education, engagement and awareness.

Arataki 2023 is available on our website here: <https://www.nzta.govt.nz/planning-and-investment/planning/arataki/>



**Figure 4.** Drivers for future change

The 6 key drivers apply pressure to the approaches we use to plan for, maintain, operate and improve the state highway network in a variety of ways.

These pressures have been grouped around the following 4 themes:

- changing use of the transport system
- changes in our climate
- changing performance expectations
- increasing productivity and dependability in managing our assets.



## Changing use of the transport system

Traffic based on Vehicle Kilometres Travelled (VKT), has accelerated from 2015 onwards, only slowed by the impact of COVID-19 in 2020 and 2021, with lock-down and travel restrictions resulting in a reduction of VKT of 8.67% in 2020/21 compared to 2019/20. However, VKT growth on state highways has returned to near prepandemic levels with a 6% growth between 2020 and 2024.

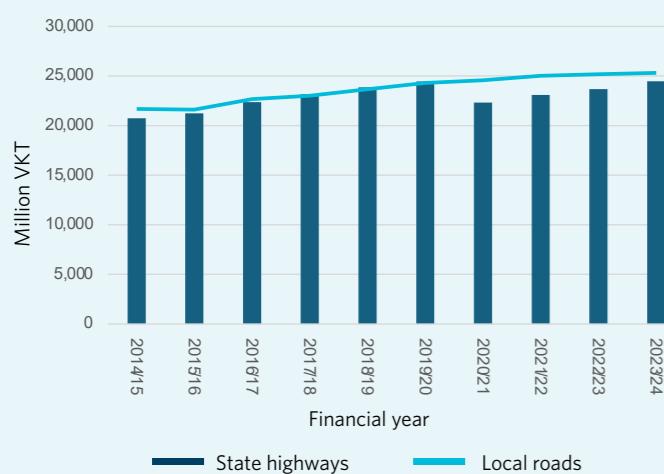


Figure 5. VKT trends

Changing use of the transport system is driven by:

### Demand change:

- Demographic change. Population growth is a fundamental driver of transport challenges and opportunities. A growing population means more people, who need to get to places that matter to them like work, education, and entertainment. It also means more goods need to be moved to these growing locations. Business activity will increase to serve this rising population, resulting in more business travel.

The location of population growth has also shifted in recent years. Since 2020, towns close to major cities have gained the most people, while growth in many major cities has slowed considerably, and even declined in places like Auckland.

Populations moving to cities, known as urbanisation, is a long-standing contributor to demographic change. In 2018, 86% of New Zealand's population lived in urban environments<sup>3</sup>. This is projected to exceed 90% by 2040.

Figure 6 shows the projected population growth/stagnation to 2048.

- Changing work patterns. A consequence of the COVID-19 pandemic has been the general acceptance of the ability of people to work from home, particularly those in the service and knowledge sectors. While many organisations are now mandating that staff return to their workplace, at least part-time, it is likely that significant levels of remote working will continue. Further changes starting to be seen more widely include 3-day and 4-day weeks, 9-day fortnights, and flexitime. These changes mean that the number of trips to places of work, and therefore commuter demand on the transport system, is likely to be moderated. However, the long-term changes are unclear as yet.

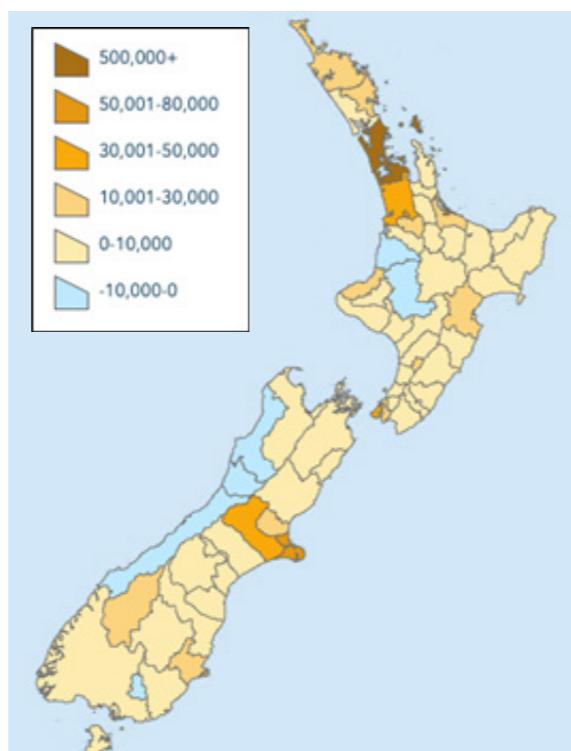


Figure 6. Projected population growth/stagnation to 2048  
(source: <https://www.stats.govt.nz/information-releases/subnational-population-estimates-at-30-june-2024-2018-base/>)

- Mode of transport changes. We have more transport mode options now than even a few years ago. The emergence of e-scooters has provided a cheap and effective alternative to light vehicles for short trips. Likewise, the accessibility of e-bikes has made cycling accessible for a wider range of ages and abilities. The challenge now is ensuring that the increase in acceptance and use of these emerging modes is accommodated well by a safe and accessible transport system that presents these modes as desirable choices.

Efforts to reduce emissions and VKT will affect a range of other transport challenges. For example, historical trends of population growth that drive increased transport demand won't be as relevant if we reduce light vehicle VKT. This means other transport modes will play a much greater role.

A transformational shift away from private vehicle travel will require offering safe, reliable, appropriate alternatives that are accessible to everyone. This has implications for urban form, road space allocation, and network prioritisation.

### Technology change:

- The gradual change in motive power of the vehicle fleet from ICE (Internal Combustion Engine) to electric has the potential to create new challenges in how state highways are funded and the damage they cause to infrastructure.

Battery electric vehicles (BEVs) are currently comparatively heavier than ICE powered vehicles. While in the future, technological advances may reduce this differential significantly, the current increase in weight for heavy commercial vehicles is significant, for buses in particular. This is resulting in an increased axle loading of up to 25% from an ICE powered vehicle, significantly increasing the damage caused by these vehicles to pavements, potentially doubling the damage done.

In addition, the rapid increase in popularity of e-bikes also allows more challenging topography to be cycled. In turn this brings implications on provision of safe, reliable and accessible infrastructure to cater for this demand.

### Interregional change:

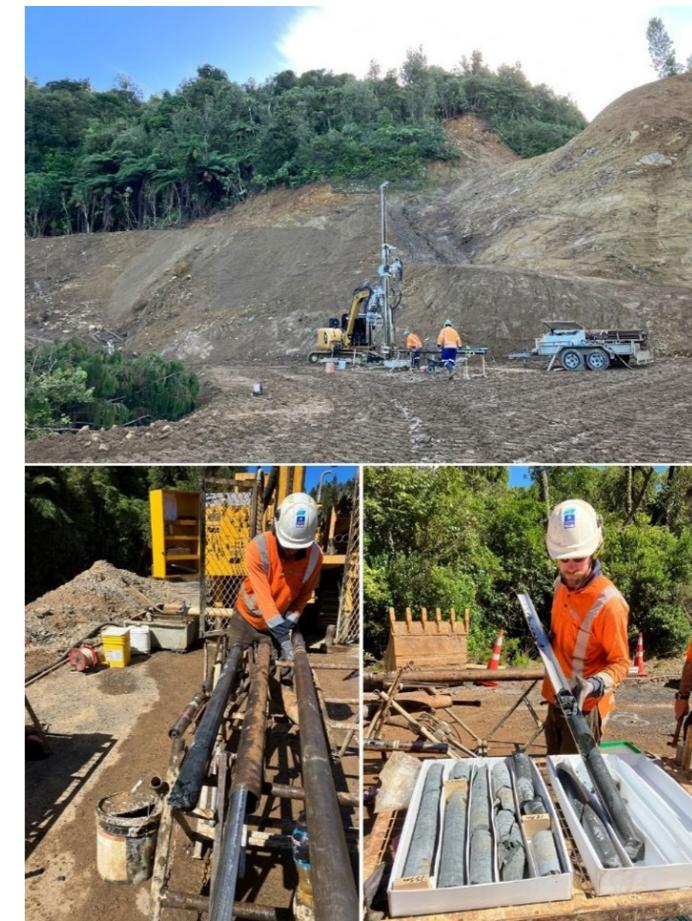
- Nationally significant freight connections are critical to supporting the country's economic wellbeing. They provide primary land-based connections across New Zealand.

Road freight is mostly moved on state highways, motorways, and the arterial roading network. For a number of goods, there are benefits to moving more freight by rail and coastal shipping.

In the short-to-medium term, shifting to lower-emissions modes like rail and coastal shipping can support a reduction in greenhouse gas emissions, improved road safety and reduced road maintenance costs.

**Challenge:** Changing use of the transport system.

**Strategic response:** Ensure current demand driver trends inform demand projections.





## Changing climate

Severe weather is increasingly impacting our environment, communities and infrastructure, including roads and rail. Anticipated sea level rise will increase the rate of coastal erosion and the frequency of coastal flooding events. Over the long-term, we need to plan for sea level rises of more than one metre.

Hotter temperatures and wildfires can damage transport infrastructure and roads, leading to disruption and increased repair costs.

Climate change presents 2 significant pressures on investment for state highways:

**1. Climate change mitigation:** Lowering the impact we have on climate change through reducing greenhouse gas emissions:

- Reduction in carbon footprint. In addition to the reduction of carbon produced by the national vehicle fleet VKT, there is a need to reduce the carbon footprint of the construction, maintenance and operation of the state highway network, through innovation and ways of doing business that drive sustainable sourcing and use of materials, waste minimisation and emissions reductions, while providing the same service benefit.

**2. Climate change adaptation:** Planning for, and investing in preparing for the impacts of climate change through renewals and replacements that are designed to withstand the expected changes brought about by hotter temperatures, heavier more intense rainfall, and sea level rise.

Planning for climate adaptation is critical to managing the future vulnerability of the transport system as climate related impacts increase. Many parts of the state highway network have considerable resilience issues and these will need to be addressed.

The effects of climate change are already being experienced across New Zealand. More severe rainfall events are projected in the future and increased drought severity is projected to increase in almost all regions. A recent example is the Ashburton floods of May 2021, where severe rainfall resulted in slumping of the SH1 road bridge over the Ashburton River/Hakatere due to

scouring. The incident highlighted the resilience risk these extreme rainfall events present, with widespread bridge closures resulting in an up to a 13 hour diversion for freight.

With the projected increase in frequency of these extreme weather events, investment in maintaining the resilience of the network will continue to be required.

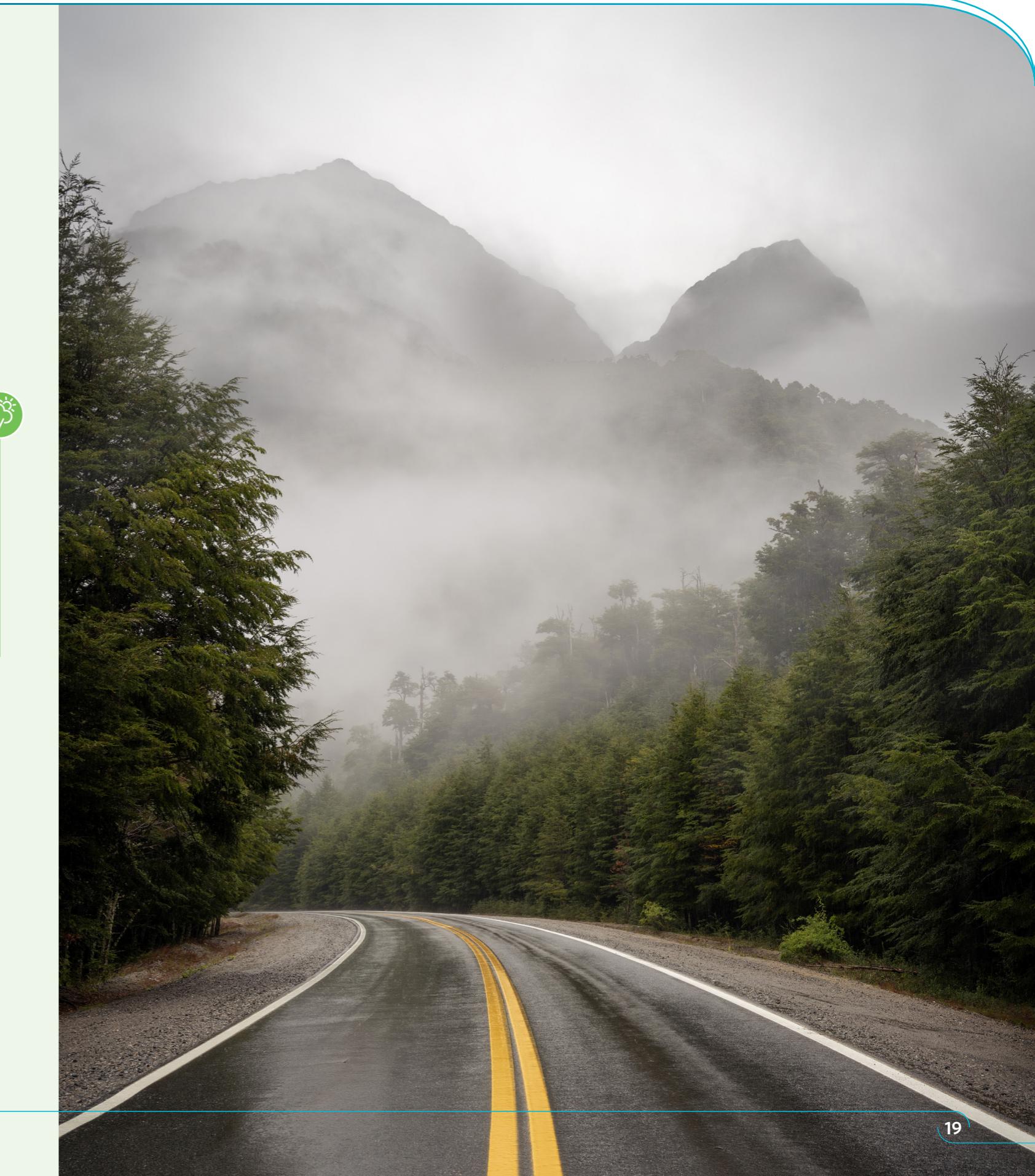
The damage caused by the impacts of climate change also have a significant cost impact due to the level of emergency works expenditure required to recover from these events when they occur.

Future investment in renewals will need to factor in adaptation to the impact of climate change, having an eye to the future and making decisions about whether to defend, accommodate or retreat.

**Challenge:** Changing climate

**Strategic Response:** Ensure our hierarchy of actions to reduce VKT and emissions can be clearly shown to be cost-effective.

Ensure our asset management planning uses current agreed climate impact forecasts and our programmes of work progressively increase resilience of our network in the most cost-effective manner.





## Changing performance expectations

Changing government and societal performance expectations continue to evolve, particularly with respect to:

### Health and safety.

- **Road safety objectives:** Road safety is a strategic priority for the Government. Our previous Road to Zero strategy has been discontinued and NZTA is developing a new strategy aligned with the Government's road safety objectives. These objectives recognise that all New Zealanders have a part to play in improving road safety. NZTA's key contributions to improving road safety focus on the following objectives:
  - **Safer roads:** lift the quality of our road infrastructure. This objective has the most relevance to the State Highway Asset Strategy. We will deliver new and safe roading infrastructure, including:
    - delivering the Roads of National Significance and Roads of Regional Significance programmes
    - increasing road maintenance and renewal activities with an emphasis on pothole maintenance, pothole prevention, and a significant uplift in rehabilitation
    - developing and delivering a range of innovative, cost-effective safety infrastructure measures on existing roads
    - continuing to apply motorcycle safety-specific treatments evidenced to cost effectively reduce the risk of deaths and serious injuries occurring on high-risk routes.
  - **Safer drivers:** ensure road users are alert, unimpaired and comply with the road rules. We will reset the delivery of road safety promotion to ensure it is aligned, nationally consistent and coordinated across central government road safety partners, to target the highest contributing factors to fatal crashes. We will do this by:
    - supporting road policing and enforcement activities focused on the 7 areas of highest risk (impairment, speed, restraints, distraction, high-risk drivers, commercial vehicles, and other on-road prevention and enforcement activities)
    - delivering public education and promotion to support New Zealand Police enforcement,

- to encourage behavioural change, and to support school-based road safety education
- continuing to optimise engagement in evidential training and education programmes such as the Ride Forever and Drive programmes.

- **Resetting speed:** a balanced and targeted approach to speed limits. We will take a targeted approach to speed limit changes considering safety, economic impacts including travel times, and community views. We will do this by:
  - implementing speed limits reversals
  - prioritising the safety of young New Zealanders arriving at, or leaving school by implementing variable speed limits outside school gates
  - completing the transfer of the existing speed camera function from NZ Police to NZTA, and completing the rollout of speed camera signs on fixed speed cameras.

- **Supporting action:** enabling third-party funding. We will make efforts to reduce barriers for third-party investment into road safety. We will do this by working with ACC to identify options to increase use of ACC injury prevention funding for road safety initiatives.

- **Safer vehicles:** improve the safety performance of our vehicle fleet. This objective is not directly relevant to this State Highway Asset Strategy.

- **Keeping road workers safe:** it is imperative the people who work on the roads are kept safe; this requires planning, and the extensive use of traffic management equipment and services. The cost of providing traffic management services continues to increase. Adopting a more efficient approach to maintenance and renewals planning by consolidation of all works within an area, in a 'do it all while we are there' approach, will help to offset the increasing cost of traffic management services.

- **Environmental harms:** New Zealand's indigenous biodiversity is declining with the environment continuing to face significant pressures from human activity. The land transport system has a significant presence in the natural environment, traversing many sensitive ecosystems, habitats and waterways. To address these pressures, we must reduce the ecological effects of our construction, operation and maintenance activities and protect and enhance the biodiversity values on NZTA land.

The requirements of the National Policy Statement for Freshwater Management (2020) will affect our approach to the management of waterways and the impact of stormwater collected by and conveyed from state highways. Embedding a sustainable approach from planning to delivery and operation will result in a system that understands and manages its impacts at all stages.

In the future, there is forecast to be an increased shift to using transport corridors to support biodiversity and finding opportunities to improve water quality.

- **Challenges to funding and financing:** the costs of building, maintaining, and operating transport infrastructure have been rising rapidly due to factors that include increasing property values, increasing costs of material and labour, the increasing complexity of projects and costly consenting processes.

Funding available for land transport will come under increased pressure as the amount available from usual sources (fuel excise duty (FED), road user charges (RUC), and rates) decrease in real value over time.

Change to how transport is funded is already happening. Land transport investment by the Government is coming from an increasing variety of sources beyond the National Land Transport Fund. This includes previously committed Crown investment in the NZ Upgrade Programme, the Climate Emergency Response Fund and Road User Charges now applicable to Electric and Plug-in Hybrid Electric Vehicles.

With ongoing improvements in vehicle efficiency, revenue from traditional sources like fuel excise duty decreases per vehicle kilometre travelled, yet demands on the network remain. This trend is expected to accelerate as progress is made towards emissions reduction goals, and the conversion of vehicle fleets to electric vehicles.

The challenge to funding the replacement of infrastructure as it approaches the end of its useful life is exacerbated by other emerging costs, such as ensuring infrastructure can be adapted to deal with the impacts of climate change, and providing the additional infrastructure to support urban growth in cities.

- **Maintaining social and economic wellbeing:** transport plays a fundamental role in maintaining the social and economic wellbeing of New Zealanders, providing the means for communities to connect to workplaces, education, recreation, and healthcare, and providing the freight connections that keep the New Zealand economy running.

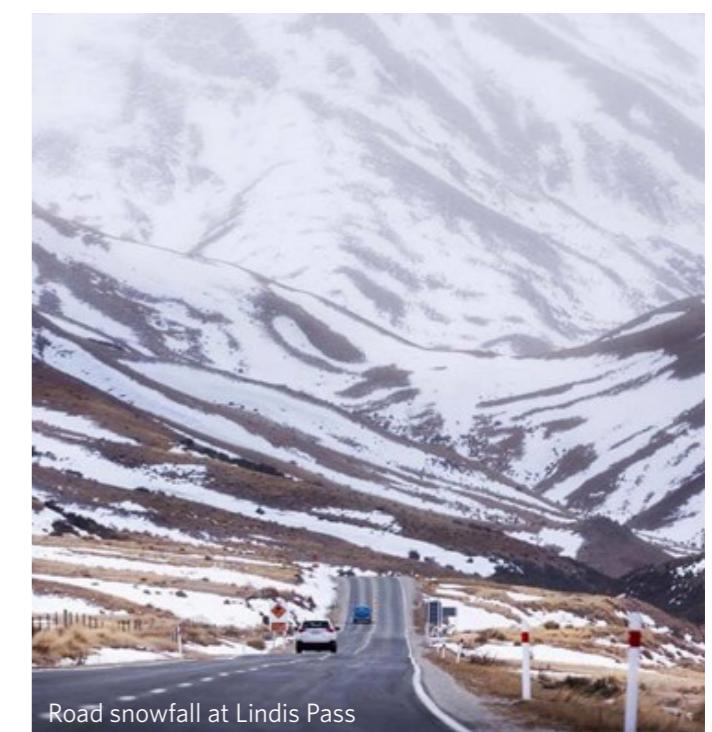
To support positive wellbeing and great places to live in New Zealand, the transport sector will need to balance focus on the physical movement of people and goods (mobility), with focus on safe, sustainable access and connectivity for all. This shift will require integration with digital, urban development, energy, and other related systems.

While many things can be done online, physical travel is still fundamental to a well-run economy where people live fully.

### Challenge: Changing performance expectations

**Strategic response:** Ensure implications of changing performance expectations on our programmes and expenditure needs are clear.

Ensure that our actions are targeted to provide outcomes that can be shown to achieve the best balance of cost, quality and risk.



Road snowfall at Lindis Pass



## Increasing productivity and dependability in managing our assets

We need to deliver our programme of works more efficiently and sustainably, as costs and complexity increase.

- **Changes in practice:** we need to change our practices to gain efficiencies, prolong the useful life of our assets, and reduce the disruption to traffic and neighbours during construction. We are increasingly using structural road pavement designs on routes with greater traffic volumes because these are less vulnerable to damage, have a longer service life, require less frequent repair and resurfacing activities reducing the impact of works on customers, and have net benefit to New Zealand, despite the greater cost at time of renewal.

To work more efficiently and reduce the embedded carbon of our operation we need to coordinate all the required maintenance and renewals within work areas and complete these as a bundled package.

- **Delivery and sustainability challenges:** the transformation in scale of activity to deliver outcomes and services now targeted are beyond the current capacity and capability of NZTA and the sector using current approaches. Reasonably low unemployment combined with immigration restrictions have meant that the ability to fill the gap in the short term has been severely constrained. Our maintenance and renewals programme needs to consider this and programme works so that they are deliverable, while working with the sector to increase workforce capacity and capability.

- **Delivering on our sustainability action plan:** NZTA has a vision for a sustainable, multi-modal land transport system where public transport, active or shared modes are the first choice for most daily transport needs. Towns and cities are re-shaped to reduce reliance on cars and support active, healthy and shared transport choices. Where people and business require motorised travel, it should be low carbon, safe and efficient. In regional and rural New Zealand, provision for efficient freight movement and attractive tourism routes will need to tread lightly on the land and be sensitive to natural and built environments.

- **Cost pressures of managing the assets on the network:** there are a range of cost pressures on the network, including more complex road infrastructure, funding limits, increased cost of labour and materials, and higher costs of emergency works due to increasing frequencies and severity of natural hazards, including those caused by climate change.

- **Network growth and more complex road infrastructure:** adding to the pressures on the state highway is the size and complexity of the network as a result of the Significant Improvement Programme, as well as the net transfer of local roads to the state highway network. New traffic management, monitoring and control devices are being added to existing highways, providing better throughput and faster response to incidents. These require replacement just before they fail or when they become obsolete. There is also more safety infrastructure to maintain, including new barriers, rumble strips and noise mitigating surfaces, all of which are shorter life assets and therefore require more frequent renewal. Barriers require ongoing repair/replacement when they are unserviceable as a consequence of environmental decay or a crash. Noise mitigating surfaces are more expensive to replace than traditional chip seal or smooth asphaltic concrete surfaces. Environmental compliance has also increased, with more consents being required – adding cost to the maintenance of the state highway network.

**Challenge:** Increasing productivity and dependability in managing our assets.

**Strategic response:** NZTA is assuming greater control of what work is done, where and when. This is reflected in changes to the decision-making responsibilities in the maintenance, operations and renewal contract model, which introduces standardised designs and targeted maintenance, operations and renewals intervention strategies based on defined Strategic Maintenance Focus Areas, as detailed in the National Tactical Plan.



# Our Asset Management System

## Why have a framework for managing the state highways?

Treasury defines asset management as the systematic and coordinated activities and practices of an organisation to optimally and sustainably deliver its objectives through the cost-effective lifecycle management of assets. In NZTA terms, asset management is a cohesive process by which activities deliver value to customers (described by service levels) from assets (infrastructure and related operations) over their lifecycle across the full use of the network. An asset management framework describes how we ensure that our processes cohesively deliver greater value.

## Asset management expectations

The government sets its expectations for excellence in asset management through the Government Policy Statement on Land Transport and the Letter of Expectations, and through the Cabinet Office circular: CO (23) 9: Investment Management and Asset Performance in Departments and Other Entities. Treasury manages this policy.

The ISO55000 series of standards defines the internationally accepted requirements of asset management.

Long-lived assets may span multiple changes in organisational leadership. So, the realisation of value requires a long-term view and continuity of stewardship, in line with organisational objectives.

## Scope of our Asset Management System

NZTA undertakes asset management activities to achieve its organisational goals and objectives. The asset management system is the means by which people, processes, data and information systems are used to manage assets and services (IIMM2020). This system interacts with other similar systems across NZTA, such as quality, risk, health and safety, environmental, people and capability, and financial management systems.

The NZTA Executive Leadership team is committed to sound asset management planning and recognises this involves ongoing investment. It endorses the Asset Management Policy and has committed to progressing towards an advanced asset management maturity level which reflects the scale, nature, complexities and risks associated with the infrastructure managed, and the services this enables.

NZTA has adopted the overarching asset management framework shown in Figure 7. It draws on the internationally accepted scope and elements of asset management as presented in the International Infrastructure Management Manual (IIMM), which was developed in New Zealand and is used worldwide.

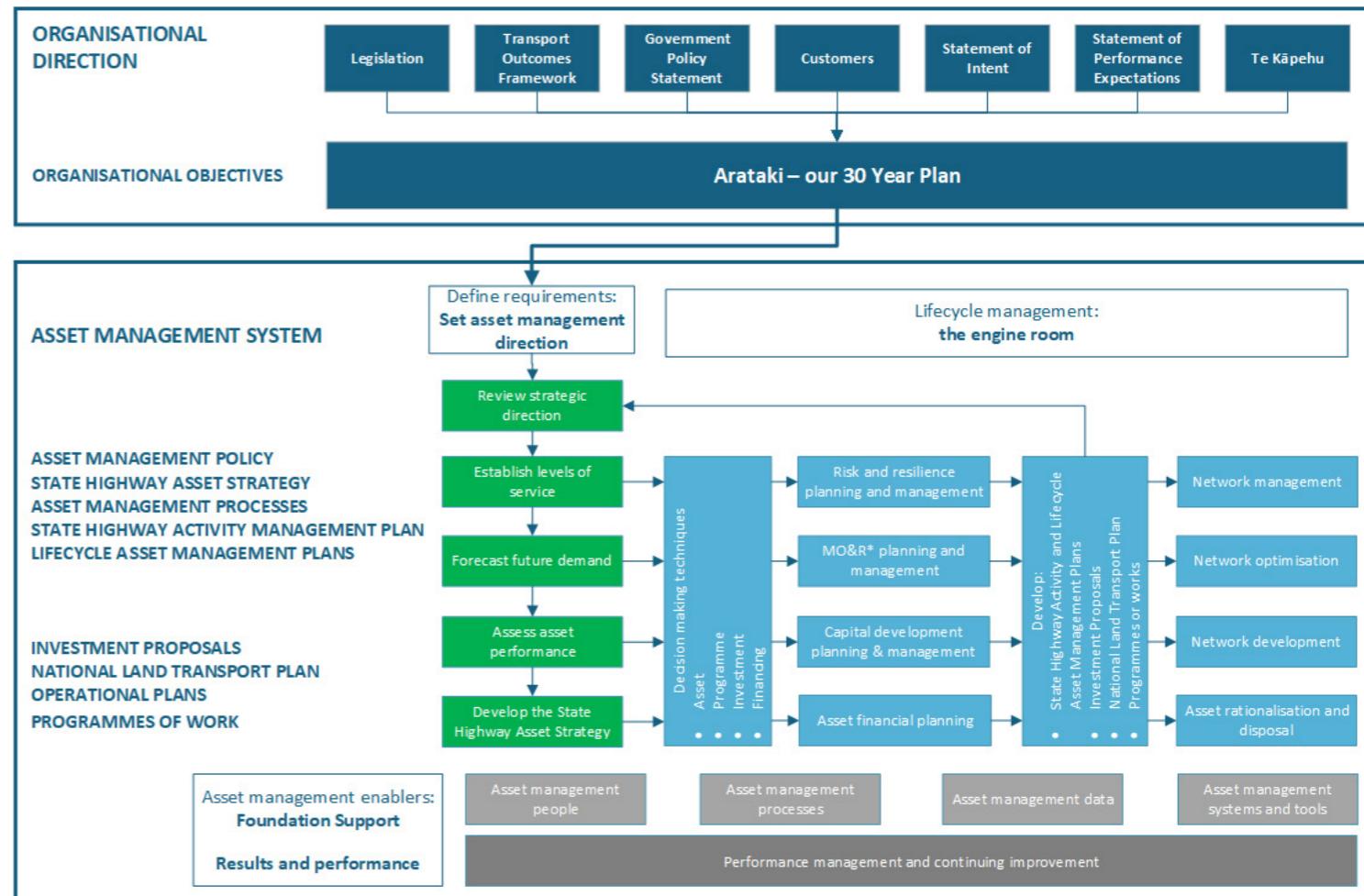


Figure 7. Asset Management System

## Setting direction

As presented in the Strategic context (page 12), key influences in setting our organisational and overall land transport system direction are:

- government direction and expectations, as well as our customers' needs
- organisational policy & strategy in response to these external influences.

Key contributors to setting our asset management direction include the:

- **Asset Management Policy** - provides the overarching direction for asset management of the state highway network by aligning all asset management activities to support NZTA's strategy and desired outcomes (including the commitments made within the SOI and SPE).
- **Asset management strategy** - this document. Our State Highway Asset Strategy gives effect to the policy by defining our objectives: what we want from the network to best realise the NZTA desired outcomes. It provides the approach, practices and framework we will apply to achieve what we have promised. It considers the organisational strategic plan, organisational policies, stakeholder needs and expectations, and establishes asset management decision-making criteria.

- **Governance and leadership** - although "people" is included in Figure 7 as a Foundation Support element for clarity, an organisation's culture, leadership and engagement with people creates the environment for asset management to succeed. This environment establishes a way of working and a set of behaviours that shape the processes to support effective asset management, including change management.

## The engine room

### Planning and decision making

This element guides how NZTA establishes, documents and maintains its plans for the assets, aligned with our strategic direction, to deliver asset management objectives. Key activities are:

- Proposal of mid to long-term service delivery - responding to the GPS on how to deliver on the governments transport priorities through Investment Proposal of activities (Investment Proposals). The activities associated with the state highway system forms part of this proposal.

- Financing and programme options - The Investment Proposal is informed by the National Land Transport Programme (NLTP), which looks out over the next 30 years alongside Arataki to estimate the scale and location of investment likely to be required to deliver a 'fit for purpose' transport system. This aligns with the Regional Land Transport Plans (RLTPs).
- Investment decision making - investment opportunities are subjected to both external investment decisions such as MOT Transport Outcomes framework, as well as our internal Investment decision-making framework. The resulting opportunities are proposed in the NLTP/RLTPs.
- Asset management plans - AMPs use a hierarchy of intervention to ensure that an appropriate balance is struck between managing demand (including a suitable range of alternative transport modes) and optimising the existing networks, as well as developing new infrastructure to meet demand in all forms. Our primary AMP is the State Highway Activity Management Plan (SHAMP). This is underpinned by the more detailed Lifecycle Asset Management Plans (LAMPs), as well as other tactical asset and operational strategies. The SHAMP also forms the business case for state highway investment in the NLTP.

### Delivery

Delivery is the implementation of our plans to achieve organisational outcomes through the optimisation of the operational, maintenance, renewal, improvement and divestment activities. The positioning of the lifecycle delivery processes can vary relative to enacting the selected investment options agreed in the Investment Proposal as part of the planning and decision making activities. Our key activities include:

- Network optimisation - the activities needed to maximise the use of our existing infrastructure to best enable the flow of people and goods through the system. The optimisation of the system requires a focused mixture of non-asset solutions altering management of the system and asset improvements.
- Create or improve the network - the delivery of new and improved assets through the capital investment activity classes from approved and funded NLTP programmes and projects, through a suite of programme and project management practices, system design and infrastructure delivery.

- Network management - (network asset management, operation, maintenance, renewal), the activities required for the efficient and effective management of the existing infrastructure to keep the system operating as intended and to required standards/Levels of Service (LoS).
- Asset rationalisation and disposal - property management, the activities needed to acquire land for capital improvement programmes more efficiently, and enable the management of the existing system and the rationalisation and disposal of surplus land and property.

## Results and performance

- Performance management - to adequately manage financial and non-financial performance and the effectiveness of the asset management system requires application of our performance management system, requires our performance management system to be applied to enable us to understand the performance of various elements within the asset management system.
- Continuous improvement - continuous improvement of our asset management systems requires using the performance management system to understand the performance of various elements within the asset management system for potential improvement opportunities to implement, as well as apply corrective actions where needed.

## Foundation support

- People - people do asset management. Our staff are critical to progressing asset management to consistently achieve good practice and realise our asset management objectives.
- Processes, technology and tools - having good processes and the appropriate mechanism to implement them are key to enabling our people to undertake our asset management activities efficiently and effectively to deliver the services we provide, and to realise our asset management objectives.
- Knowledge management - knowledge management is the process we use to handle and oversee all the knowledge that exists within our organisation (including discrete and intangible skills that our people possess, and the data and information that underpins our decision making).

The relationships between the key planning documents relevant to asset management are illustrated in Figure 8 below.

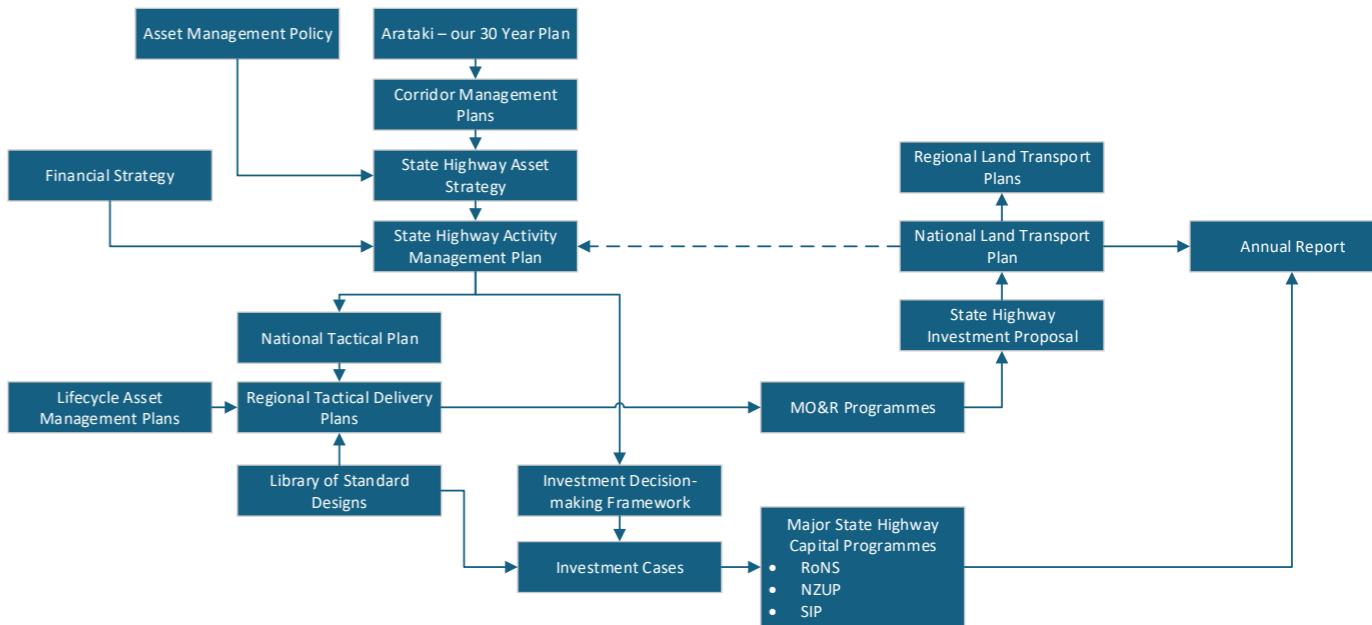


Figure 8. Key asset management planning documentation linkage

## Asset Management Policy

The purpose of the Asset Management Policy is to provide clear, consistent direction for the development of asset management strategies, objectives and plans that will achieve NZTA's commitments to its stakeholders. The policy provides direction as to the appropriate focus and level of asset management practice expected.

NZTA are stewards of New Zealand's state highway infrastructure, and recognise that the assets exist to provide services and value for New Zealand and its people.

NZTA's Asset Management Policy commits us to:

1. Manage our assets to deliver intended levels and methods of service.
2. Manage the asset in line with relevant legislation, government direction and required outcomes, NZTA's objectives, purpose and vision.
3. Achieve and sustain an advanced level of asset management practice and performance appropriate with the scale, importance and criticality of the state highway infrastructure.
4. Manage our assets in line with any organisationally approved asset management direction and framework.
5. Identify service critical assets and ensure our asset register records detail the identity, condition and risk exposure of these assets.
6. Maintain asset management plans to inform strategic, tactical and operational choices.
7. Capture relevant indicators of past and projected asset performance for service critical assets and use these indicators in internal management and decision-making processes.
8. Ensure robust governance is embedded within NZTA, with clearly defined accountabilities and responsibilities for asset management at an appropriate level.
9. Use a whole of lifecycle approach to asset management decisions for benefits, costs and for other key outcomes including reducing carbon.
10. Seek to exchange our asset management expertise and practical knowledge with our partners to increase the return of value for New Zealand.
11. Incorporate consideration of the extent to which assets are resilient to the effects of significant risks in our planning and asset management practices.
12. Ensure asset management decisions consider the appropriate balance of cost, risk and performance in delivering required outcomes.
13. Repurpose, reuse, sell or otherwise withdraw assets as appropriate when they are no longer required.
14. Integrate our asset management practices with other organisational functions, processes and activities.



## Our strategy objectives

This strategy is founded on 3 overarching objectives, and specific objectives for each of our 3 shifts.

### State highway asset management strategic objectives

- We deliver the services that meet our customers' current and future needs.
- We drive value for money to stay ahead of inflation.
- We minimise risk to our customers' journeys.

#### Well planned



We develop and maintain clear plans of the short-and-long-term state highway interventions and activities required to effectively and efficiently make our contribution to achieving the goals of Arataki for the future transport system.

- We have a clear vision and policy for managing the state highway system, guiding how our business activities contribute to a safe, efficient and effective transport system in the public interest.
- Our intervention strategies and planned activities resolve short- to mid-term service level issues, and deliver the transport services and network that are required in the future.
- We plan the delivery of our portfolio of activities to maximise return on investment and to minimise risk.
- We have a robust and clear evidence base informing service delivery and asset management decisions.

#### Improved delivery



We deliver to the scope, quality, impact-cost and schedule of the portfolio of activities agreed with investors.

- We get people and goods to their destination cost-effectively and reliably.
- Workforce productivity improves at a greater rate than inflation.
- We simplify, standardise and speed up our business processes to release resource for productive work.
- Our standard requirements are transparent and accessible to all, and are the default approach to developing and delivering state highway activities.
- We develop and retain the resources required to deliver the agreed programme.

#### Improved capability



We're an employer of choice because our performance culture attracts people, and our capability build returns value to staff. We've a clear vision and policy for managing the state highway system guiding how our business activities contribute to a safe, efficient and effective transport system in the public interest.

- We know what roles we and others have in Transport Services, and we're clear about how they work together as part of our wider organisation.
- We're recognised by Treasury as the lead infrastructure asset management practitioner in the state sector.
- We actively develop our workforce capability to meet the needs of new ways of working.
- We have a continuing improvement programme systematically targeting gains in value for money, while delivering progress over perfection.



## Well planned

-shifting to fully integrated planning of a future fit network, that gives a clear role and direction for state highways.

### Tē tōia, tē haumia

*Nothing can be achieved without a plan, workforce and a way of doing things.*

This whakatauki (Māori proverb) speaks to the importance of having a 'plan of attack', guiding our conversations and discussions as we plan and deliver our work for New Zealand.

### He rangi tā Matawhāiti, he rangi tā Matawhānui

*The person with narrow vision sees a narrow horizon, the person with wide vision has plentiful opportunities.*

We need to think big to achieve big things. As kaitiaki - guardians of this precious network for New Zealand, NZTA must look wide and far to shape the future network and maintain a relentless focus on creating value for New Zealanders.

### The opportunity

The opportunity is to enable efficient delivery through good planning, which reduces uncertainty in scope or cost drivers, optimises activities for maximum productivity and minimises customer disruption.

This shift is about:

1. supporting the delivery of Arataki and the State Highway Investment Proposal (SHIP)
2. targeting investment to the prioritised activities to improve outcomes and reduce operating costs
3. turning investors intent into activities that can be designed and implemented in a way that delivers the value for money expected from the investment.

### The asset management objectives

We develop and maintain clear plans of the short-and long-term state highway interventions and activities required to effectively and efficiently make our contribution to achieving the goals of Arataki for the future transport system.

- We have a clear vision and policy for managing the state highway system guiding how our business activities contribute to a safe, efficient and effective transport system in the public interest.
- Our intervention strategies and planned activities resolve short-to mid-term service level issues and deliver the transport services and network that are required in the future.
- We plan the delivery of our portfolio of activities to maximise return on investment and minimise risk.
- We have a robust and clear evidence base informing service delivery and asset management decisions.



**Well planned- shifting from piecemeal to integrated future fit network.**





## Where we want to be

### 1. We have a plan of future activities for all of the state highway network.

Our shared plan shows how we intend to deliver services and improve transport outcomes across the state highway network, why the activities have been selected and what can be expected because of them.

### 2. We have clear investment intent.

We have clear investment intent, setting out what activities are to be delivered, their scope and collective impact on outcomes, service levels and infrastructure conditions, and related risks and management strategies.

### 3. Our plans unlock efficient delivery.

We intervene with the right solution, at the right time, in the right place, for the right reasons. Our planning and investment decision making is well informed, and evidence based. Planned activities are effective and efficient responses to all challenges in any place, over time, and the expected impacts on service levels, infrastructure and risk apparent.

## Our key moves

### Make the most of what we have

We improve network utilisation through interventions to avoid or defer the need for capacity increases by:

- undertaking operational changes, more minor works and incremental activities instead of larger works
- bundling co-located activities to achieve multiple outcomes at once
- developing a procurement pipeline to optimise resource efficiency, capacity and competency.

### Effective advocacy

We advocate to planning and investment decision makers for the critical role and benefit of state highways and potential future activities. By keeping planning and investment decision makers well informed, this ensures they understand the trade-offs being made, and support decisions that reflect achievable objectives for the short-, medium- or long-term.

### Actively engage Māori, partners and stakeholders

We're highly responsive, proactive with our engagement with Māori, co-investors, partners and stakeholders based on openness and transparency.

### Agree levels of service

We develop and maintain service level expectations for the state highway network to focus activity for greatest benefit. This identifies and recognises the critical services and infrastructure.

### Forecast network challenges

We maintain forecasts of network demand, service performance, risk and asset condition to inform planning, operational and repair activities.

### Future-fit network and investment planning

We collaborate with System Leadership to plan a future-fit state highway system; defining the future extent and roles of the state highway services and networks for it to make the contribution sought for the transport system as a whole.

### Plan, schedule and bundle activities for efficient delivery

We develop plans sufficiently to minimise risk and uncertainty; planning the scope, bundling and scheduling activities to maximise productivity and minimise customer disruption.

### Robust asset management planning

We develop and maintain credible asset management plans that are based on good international practice and reflect a coordinated approach to problem solving and decision making throughout the asset lifecycle.

### Transparent portfolio planning

We develop and manage cohesive shared plans of the portfolio of activities to be delivered to meet investor intent.

### Shared evidence, analytics, plans and impact

We develop and maintain information systems that share the spatial and temporal:

- service level and asset condition targets measurements and forecasts
- access and use requirements
- evidence, analytics and insight used to plan
- planned, current and past activities and their intended and actual impact on services levels or asset condition
- property, and infrastructure holdings
- network and service risks, mitigation and management
- network controls, regulatory requirements.

## What good looks like

We'll know we're providing a clear role and direction for the state highway network when:

- we have a clear vision and policy approved for managing the state highway system to ensure our business activities contribute to delivering the priority interventions agreed with investment decision-makers and we adapt or stop activities that do not
- we manage a future focused network through robust holistic integrated planning of the system to identify and propose the best mix of investments that will optimise benefits for people, the economy and the environment, so that we leave behind great legacies for future generations. We ensure the network enables the right balance of: access to the network, appropriate capacity, prosperous communities, efficient connections, safeguarded critical links, protection to our environment, use of external levers and protection to our customers on the network
- within 3 years we consistently utilise robust levels of services aligned with the One Network Framework (ONF) to identify and decrease the length of network considered not fit-for-purpose and/or a critical risk component on the network by 2% year-on-year
- our plans show we understand how and when to make the right type of change - transformational, incremental/adaptive, or reactive - to deliver on desired outcomes. We will achieve this by using our robust asset criticality and intervention hierarchy to inform our decisions
- there is increased investor confidence in our funding and activity requests for investment. Decision-making parties are supported as requests for investment align with our plan, reflect agreed delivery priorities, are transparent about trade-offs between options, and are based on robust evidence and forecasts
- we achieve a 15%-20% productivity improvement in programme delivery within 10 years through co-ordinated programming using a fully spatial 30-year plan and programme that is aligned for all activities across all sections of the network
- our partners and stakeholders report greater satisfaction in our planning - our state highway planning is developed collaboratively to complement our partners' transport and land use plans and contributes to the transport sector's strategic and investment plans
- our plans are accessible and are maintained so they represent the current and future views of service levels, demand and activities. We share evidence with our partners. We use our spatial information systems to programme our activities, and provide access to complete views of our planned activities and impacts on outcome service levels and risk, and the evidence used when developing those plans.



## Improved delivery

-enhancing the way we deliver and protect our network.

### *He iti te mokoroa, nāna i kati te kahikatea*

*the mokoroa (grub) may be small, yet it cuts through the kahikatea (tall coniferous tree).*

Small things can have a great impact. Although resources may be few in number, or limited in scale, it is still possible to achieve great things. For us, this means making better use of the existing state highway network.

### *The opportunity*

This shift is about:

1. Delivering the value for money from our portfolio of activities that was agreed with the investor.
2. Improving the efficiency and effectiveness of all our activities.
3. Improving the predictability of the scope, schedule, impact and cost of activities, individually and across the portfolio.

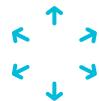
### *The asset management objectives*

We deliver to the scope, quality, impact-cost and schedule of the portfolio of activities agreed with investors.

- We get people and goods to their destination cost-effectively and reliably.
- Workforce productivity improves at a greater rate than inflation.
- We simplify, standardise and speed up our business processes to release resource for productive work.
- Our standard requirements are transparent and accessible to all and are the default approach to developing and delivering state highway activities.
- We develop and retain the resources required to deliver the agreed programme.

**Improved delivery – shifting from broad arms-length delivery to focused, streamlined and confident delivery.**





## Where we want to be

### 1. We deliver what we are funded to deliver.

We deliver the portfolios of services, network operations and maintenance, and improvements to agreed costs, timeframes and impacts.

### 2. We optimise our service delivery and network activities alongside those of our partners.

We fulfil our role in the land transport system alongside other providers for the benefit of our customers.

### 3. We adapt to our communities' needs and changing circumstances.

We engage with Māori and our communities, so we understand how best to meet their needs through our activities. We adapt our goals, processes and focus to meet community needs.

### 4. We efficiently procure our services.

We procure consulting and physical works services that efficiently deliver the outputs required to achieve the service and network outcomes targeted by investors in the short-and long term.

## Our key moves

### Improve customer experience

We improve customer experience across the network, their ability to make informed travel choices, their experience of engaging with us or our suppliers, and at our work sites.

### Keep people & goods moving

We keep our corridors open, safe, and functional by:

- planning, bundling and scoping road works to minimise current and future traffic disruption
- adapting activities to best enable safe and appropriate speeds
- managing the risks of below-optimal investment while maintaining critical networks and state highway value
- proactively mitigating risks of closure
- responding to events and incidents to restore service promptly.

### Deliver to our activity impact, cost, schedule and risk targets

We deliver to the expectations for activities set by investors.

### Focus design and scope on the core targeted impact

We prioritise design and scope to achieve the impact sought by the investor.

### Design for implementation productivity

We simplify, standardise, automate design, implementation and management practices to speed up processes and reduce costs. We maximise offsite fabrication and use of standard products.

### Minimise whole of life costs

We design and build infrastructure to minimise whole-of-life costs of service and infrastructure provision, and for our customers.

### Develop right-sized high-quality business cases

We produce high-quality business cases right-sized for the scale and nature of the potential investment by clearly defining problems, scope, lifecycle, desired outcomes and impacts, costs, dependencies, and risks, and assessing potential options against clear criteria and a do nothing option.

### Adapt what we deliver, and how we deliver, to meet the needs of communities, the environment and changing circumstances

We engage early with Māori and our communities so we understand how best to adapt our goals, processes and focus to meet community needs

We reduce the environmental impact of projects and maintenance activities on the environment.

### Strengthen procurement

We strengthen procurement by adopting a common efficient approach to effective procurement. We incentivise delivery of specified outputs and processes, allocate risk for most efficient and effective delivery, and work with the supplier sector and through our procurement team to ensure that suppliers have the incentive, capability and capacity to deliver procured works and services to target in the short-and longer-term.

## What good looks like

We'll know when we're doing what we promise and delivering the right interventions when:

- we consistently move year-on-year towards a target of 100% of our projects delivered on time, within budget, to the quality agreed, with a sustainable use of resources, and with minimal waste
- our plans are developed following consistent and rigorous processes so are integrated (that is, they consider related activities and projects), based on the best available data and information, and are transparent and shared
- we are providing increasingly reliable estimates of impact and cost
- we have strong long-term relationships with our partners that focus on commonsense problem solving and genuine collaboration to achieve agreed outcomes
- our partnerships with Māori are strong – based on honest and open two-way communication – we demonstrate our commitment to unlocking opportunities, incorporating mātauranga Māori (traditional knowledge) in decision making, and enabling and supporting tino rangatiratanga
- suppliers have the sustainable capability and capacity to deliver works and services and their tenders are competitive
- we are maximising network utilisation and minimising inconsistency of travel times by actively managing traffic flows, including getting people moving after incidents as quickly as practicable
- our activities align with the organisation's Arataki 30 Year Plan and extract maximum value from the existing network by focusing on targeted programmes of incremental change, which defers the need for large and expensive infrastructure projects
- we invest early in incremental changes with less disruption to communities. This stops problems worsening with increasing costs of change, and extracts maximum value from the existing network
- we ensure that total system movement and throughput is optimal and balanced with the place-based needs of communities
- we bundle works on adjacent near-term sites to gain scale impacts on efficiency and quality, and reduce travel disruption
- Te Hiringa o Te Taiao – Our Resource Efficiency Strategy is embedded into our asset management lifecycle planning so we explicitly consider resource efficiency when making investments
- we have embedded the NZTA investment audit and benefits realisation programmes into our project management
- we operationalise projects only after documented handover and acceptance standards are met.



## Improved capability

- becoming a capable, fit-for-the-future business.

### **Ma tini ma mano ka rapa te whai**

Many hands make light work.

Teamwork is critical. When we work together, we complete tasks faster and don't duplicate effort. For us this means delivering as a single, unified team. We need to work better with other teams and support and train our people so they thrive and can apply consistent processes and standards to the infrastructure and services we provide.

### **The opportunity**

This shift is about:

1. improving our capability collectively as a business and individually so we can deliver our design, decision, and network operation activities now and in the future efficiently and effectively.
2. Working as one to streamline the way we work to deliver excellence, maximise the value we offer, and reduce inefficiencies.
3. Streamlining processes, having standards that are effective and efficient to use, a modern information system, and stronger data and analysis skills, therefore enabling us to deliver our activities with more certainty.
4. Systematically improving the value add of our business.

### **The asset management objectives**

We're an employer of choice because our performance culture attracts people, and our staff value knowledge and skills development. We have a clear vision and policy for managing the state highway system, guiding how our business activities contribute to a safe, efficient and effective transport system in the public interest.

- We know what roles we and others have in the Transport Services business group, and we're clear about how we work together as part of our wider organisation.
- We're recognised by Treasury as the lead infrastructure asset management practitioner in the state sector.
- We actively develop our workforce capability to meet the needs of new ways of working.
- We have a continuing improvement programme systematically targeting gains in value for money while delivering progress over perfection.



**Improved capability – shifting from reliant to leading.**





## Where we want to be

### 1. We have the right capability.

We deliver our services through our capable, appropriately skilled people, working with good processes to deliver great results.

### 2. We have simple, transparent and effective processes, tools and information.

Our people, suppliers and stakeholders will not face barriers to accessing policies, processes, procedures, standards and guidelines that are current, harmonious, clear and unambiguous.

### 3. We systematically strive to improve our business for a better tomorrow.

By being purposeful about how we identify and incorporate new ways of working within the business as well as new techniques, materials and approaches to maintaining the state highway network, we will drive value, provide greater environmental, social and economic benefits and set ourselves up to meet future transport system needs.

## Our key moves

### Manage asset management improvement

We manage a deliberate improvement in asset management competence to the advanced level required of our business by the Government.

### Deliver as one

We strengthen the culture and systems that empower our teams to work together effectively while still recognising each team's specialist expertise.

### Build-up our people

We proactively invest in people to build competence for current and future roles.

### Clarify and enhance our asset management operating model

We're clear about how our operating model supports good asset management. We ensure our operational policy framework is transparent and accessible to all, and is the default approach to developing and delivering state highway activities.

### Increase standardisation

We expand and improve the suite of standardised approaches, designs, products, materials and treatments used to improve design and implementation productivity, improve quality and reduce long term cost.

### Implement digital engineering

We redesign our processes, data and information systems, and build capability to make a step change in productivity, cost and value for money across the service and asset lifecycles, and across the supply chain by implementing digital engineering.

### Embed robust quality management

We develop and embed quality management expectations, incentives and processes for our activities and for our suppliers. We develop consistent quality management behaviour.

### Implement systematic continual improvement

We set targets for improvement in value for money and productivity. We develop, plan and implement priority improvement activities. We systematically measure value for money and productivity, scan the sector for opportunities and conduct lessons learned reviews to identify opportunities to be developed and implemented.

## What good looks like

We'll know we're a capable and fit-for-the-future business when:

- our asset management maturity rating shows we are operating at an appropriate level for our business. Our policies, processes, procedures, standards and guidelines are current, harmonious, clear, unambiguous, and easily accessible. Our people can easily access this through a user-friendly framework for managing the state highways, and our Asset Management Framework supports our end-to-end delivery process
- our cycle times reduce, productivity increases, and delivery costs reduce as we have fewer delivery bottlenecks because processes have been streamlined and digitised
- our culture and systems let our teams work together effectively while still recognising each team's specialist expertise. Our operating model, delegation, decision-making, and information management processes, and our team and personnel roles are straightforward and transparent
- the workforce across the sector understands how to apply knowledge and new skills and is fluent with digital information management and decision making. Our people exceed our competency expectations, and we attract and retain talented people
- our operational policy framework is transparent and accessible to all and is the default approach to developing and delivering state highway activities – workarounds are uncommon
- our design and delivery processes are efficient because we utilise a wide catalogue of standard designs, plans, materials, products insights, analytics and information
- NZTA leads the industry on the management of asset data and information, enhancing informed investment and asset management decision-making activities. Everyone in our business has access to the most recent data and information and the skills to use them, and least experienced employees are encouraged to learn from the most experienced.

## Planning assumptions and key risks

Assumption	Level of uncertainty	Potential effects of uncertainty	Approach to manage risk	Assumption	Level of uncertainty	Potential effects of uncertainty	Approach to manage risk
Overall responsibilities for land transport system management remain unchanged	Low	Although it's unlikely that there will be significant changes to state highway management, potential changes could include greater involvement by the private sector, and changes to local roads management	NZTA will continue to engage closely with central government to ensure we're an integral part of decision-making which may impact on our organisational context, and to enable us to adequately plan to respond to any changes	NZTA has the capacity (internally and through its supplier market) and adequate funding to deliver its proposed capital programme	Low	Constraints to capacity may result in programme delays, cost increases, customer disruption and reduced levels of service provided by the land transport system	NZTA will continue to engage closely with its supplier market, providing good visibility of future needs. We're also introducing greater standardisation of processes and designs to streamline our delivery, and reviewing and improving our procurement models
Funding levels are reasonably consistent with investment needs	Medium	Significant misalignment would likely lead to significant and long-lived decline in levels of service provided by the land transport system	NZTA will continue to improve its asset management planning and delivery efficiency. This includes investigation of innovative approaches and clear articulation of the impacts of funding constraints to central government	Cost estimates are accurate and price level changes follow forecast inflation	Medium	Costs for future projects and programmes may increase beyond what is currently expected, which could lead to reduced programme delivery and deferment of projects	NZTA will continue to improve its asset management planning including integration of risk management processes into cost estimation, as well as re-prioritisation, revised levels of service and/or budget changes
Asset life cycle forecasts are accurate	Low to medium	Certain assets may need to be replaced earlier or later than estimated	NZTA will continue to make better use of technology, including AI, to cost-effectively monitor the condition of the network to enable programme changes to be seamlessly incorporated, and to better inform future programmes	Climate-related hazards will continue to increase in frequency and severity	Low	Climate change is likely to have profound impacts on the performance and delivery of our infrastructure	NZTA will continue to monitor climate change projections and adopt approaches and standards to reduce network vulnerability and risk associated with current and future climate change through these processes
Growth in the demand for infrastructure services will remain similar to current levels	Medium	Sudden shifts in demand for infrastructure which may arise through changing government direction, technology and societal behaviours, may require projects to be accelerated, slowed, rescoped or stopped	NZTA will continue to routinely monitor demand driver trends and forecasts and update demand projections accordingly as an integral part of asset management planning	Work will increasingly focus on reducing the vulnerability of services and infrastructure to natural hazards to increase the reliability of services and reduce the frequency, scale and cost of emergency works	Medium	Government's strategic priorities may change, which could result in changes to levels of investment with potential impacts on service levels	NZTA will continue to engage with central government to clearly articulate impacts of strategic priority change and to enable future flexibility in our planning if needed.
Levels of service will not change significantly across asset groups	Low to medium	Government's strategic priorities may change, which could result in changes to levels of investment with potential impacts on service levels	NZTA will continue to engage with central government to clearly articulate impacts of strategic priority change and to enable future flexibility in our planning if needed	Asset management processes and decision making will be increasingly digitalised to make them more effective and efficient	Medium	Productivity improvement and return on investment will improve more slowly than desirable	Use the Aurecon Horizons report to prioritise and manage delivery of improvement in partnership with Te Aukaha - Digital

# Key asset management roles and responsibilities

Key responsibilities with respect to asset management within NZTA are summarised below:

Role	Key responsibility	Specific responsibilities	Role	Key responsibility	Specific responsibilities
Board (Elected Members)	The Board is appointed by the Minister of Transport and is responsible for making independent decisions on allocating and investing funds from the National Land Transport Fund	<ul style="list-style-type: none"> <li>Governance over all aspects of our asset management system. Approval and endorsement of Asset Management Policy, SHAS, SHAMP outputs and all significant asset investments</li> </ul>	Regional Leadership teams	Responsible for optimising and implementing the Regional Tactical Delivery Plans	<ul style="list-style-type: none"> <li>Development and optimisation of Regional Tactical Delivery Plans</li> <li>Delivery of work programmes to plan</li> </ul>
Chief Executive	Overall responsibility for ensuring the development of asset management policies, strategies, processes and procedures	<ul style="list-style-type: none"> <li>Oversight of asset and risk management practices, strategic direction alignment and investment approvals.</li> <li>Approval and endorsement of Asset Management Policy, SHAS SHAMP outputs</li> <li>Advice to Board</li> </ul>	Network & Contract managers	Management of assets and services	<ul style="list-style-type: none"> <li>Application of the asset management system to specific regions and asset classes</li> <li>Condition and performance monitoring</li> <li>Development and delivery of work programmes and related asset, works and quality information</li> <li>Budget management</li> </ul>
Asset Management lead advisors	Responsible for developing and managing the asset management system	<ul style="list-style-type: none"> <li>Development and implementation of Asset Management Policy, SHAS, SHAMP</li> <li>Development and implementation of asset management capability, processes, systems and data</li> <li>Advice to Leadership team</li> </ul>	Journey managers	Optimising journeys, minimising impact of road works	<ul style="list-style-type: none"> <li>Optimising regional tactical plans</li> </ul>
Asset Management Direction team	Setting the strategic direction for assets and the asset management framework	<ul style="list-style-type: none"> <li>Strategic and medium-term asset planning to feed into investment proposals and delivery</li> <li>LAMPs</li> <li>5 year rolling national tactical plan and supporting value for money of related regional tactical plans</li> <li>Asset management information, insight and information system requirements</li> </ul>	Transport digital domain	Provide modern, fit for purpose digital, information and technology solutions	<ul style="list-style-type: none"> <li>Strategic and tactical planning of asset management information systems</li> <li>Management of system dependencies and integration</li> <li>Delivery of operational systems and upgrades</li> <li>Information management services</li> </ul>
Chief Financial Officer	Responsible for the sustainable funding and financing of asset management programmes	<ul style="list-style-type: none"> <li>Financial and budgetary control</li> <li>Asset valuation</li> </ul>	Office of Chief Engineer and Technical Standards team	Provide expert advice and technical guides and standards	<ul style="list-style-type: none"> <li>Resolution of service delivery and infrastructure issues, applying asset management principles</li> <li>Define the technical standards and guidance for how the sector will deliver its work efficiently and effectively</li> </ul>
Leadership team	Responsible for overseeing the implementation of asset management policy and strategy	<ul style="list-style-type: none"> <li>Overseeing the implementation of asset management policy and strategy</li> <li>Review of asset management outcomes and ensuring alignment with NZTA's strategic direction across all relevant activities</li> <li>Clear communication of the asset management process outputs, together with benefits, risks and costs, to the Board</li> </ul>	Digital enablement business lead and asset lead	Direct and deliver digitalisation of processes and decisions	<ul style="list-style-type: none"> <li>Development and delivery of the Transport Services Digital Enablement Strategy and Implementation Plan, including transition pathways</li> <li>Establish, deliver and maintain robust digital enablement processes, controls and continuous improvement practices specific to Asset Management and Operations, and consistent with the Digital Enablement Strategy</li> </ul>

# Decision-making

The investment decision-making framework provides a structured and logical approach to how investment decisions are made. The core elements of the IDMF are:

- Investment principles and policies
- Investment case development
- Benefits management
- Investment prioritisation
- Making funding decisions

The IDMF fits within the wider transport planning and investment system to ensure that giving effect to the GPS, taking account of Regional Land Transport Plans and ensuring value for money are fundamental to NZTA investment decisions as shown in Figure 9.

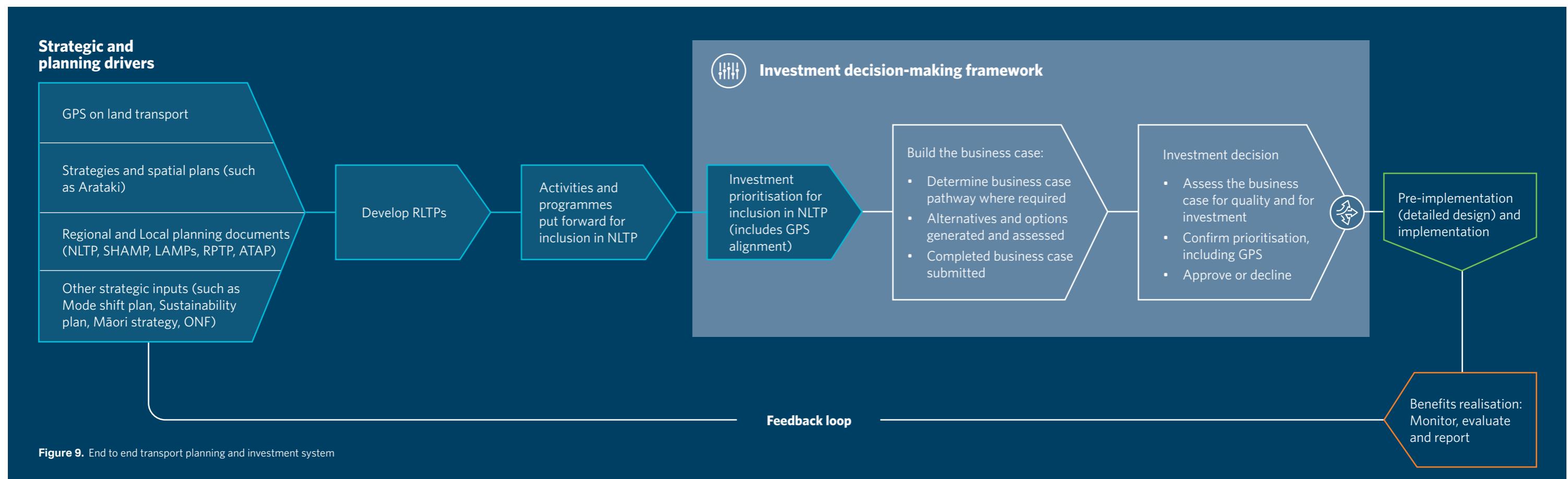


Figure 9. End to end transport planning and investment system

This is more fully described in <https://www.nzta.govt.nz/assets/planning-and-investment/docs/investment-decision-making-framework-summary.pdf>

## Maintenance, operations and renewals

Prioritisation of maintenance, operations and renewals (MO&R) activities within each network section is undertaken at a national level and tested/applied regionally using the 7 Strategic Maintenance Focus Areas presented in Table 3:

**Table 3.** Strategic Maintenance Focus Areas

Strategic Maintenance Focus Area	Definition
 <b>Uplift in Overall Performance</b>	Relative to its intended functionality, the network section is deficient in multiple outcome areas
 <b>Resilient Connection</b>	Relative to its intended functionality and the availability of alternative routes, the network section provides insufficient resilience to natural hazards
 <b>Efficient Connection</b>	Relative to its intended functionality, the network section provides insufficient journey reliability and efficiency
 <b>Improved Safety, Comfort and Experience</b>	The network section has an unacceptable crash record and/or safety risk
 <b>Improved Environmental and Journey Amenity</b>	The network section has a unique context that requires elevated environmental and journey amenity need
 <b>Maintain - Maintained Level of Focus (No Change/Status Quo)</b>	The network section performance is appropriate for the transport task and network context (fit for purpose)
 <b>Low Priority - Section Over-Performing</b>	The network section performance is greater than needed for the transport task and network context

Prioritisation of Investment and Resource within each state highway network section is assigned across 8 MO&R Work Categories as shown in Table 4. This recognises the different levels of impact that each of these work categories has on the performance gap, as indicated by the Strategic Maintenance Focus Area. This helps us focus our efforts where the greatest benefit from intervention will be achieved.

This is more fully described in the [National Tactical Plan](#).

**Table 4.** Expected Investment and Resource focus based on functional need

Strategic Maintenance Focus Areas	Investment & Resource Focus to Achieve RS Functional Need by MO&R Work Categories (Expected Investment Activity Profiles)							
	Pavement	Surfacing	Drainage	Traffic Services	Structures and Geotechnical	Winter Maintenance	Environmental and Vegetation Management	Incident and Operational Management
 <b>Uplift in Overall Performance</b>	★★★	★★★	★★★	★★★	★★★	★★	★★	★★★
 <b>Resilient Connection</b>	★★	★★	★★★	★★	★★★	★★★	★	★★
 <b>Efficient Connection</b>	★★	★★★	★★★	★★★	★★★	★★★	★	★★★
 <b>Improved Safety, Comfort and Experience</b>	★★	★★★	★★★	★★★	★★	★★	★	★★
 <b>Improved Environmental and Journey Amenity</b>	★★	★★	★★	★★	★★	★★	★★★	★★
 <b>Maintain - Maintained Level of Focus (No Change/Status Quo)</b>	★★	★★	★★	★★	★★	★★	★	★★
 <b>Low Priority - Section Over-Performing</b>	★	★	★★	★	★★	★	★	★★

Highest investment and resource focus ★★★

Targeted investment and resource focus ★★

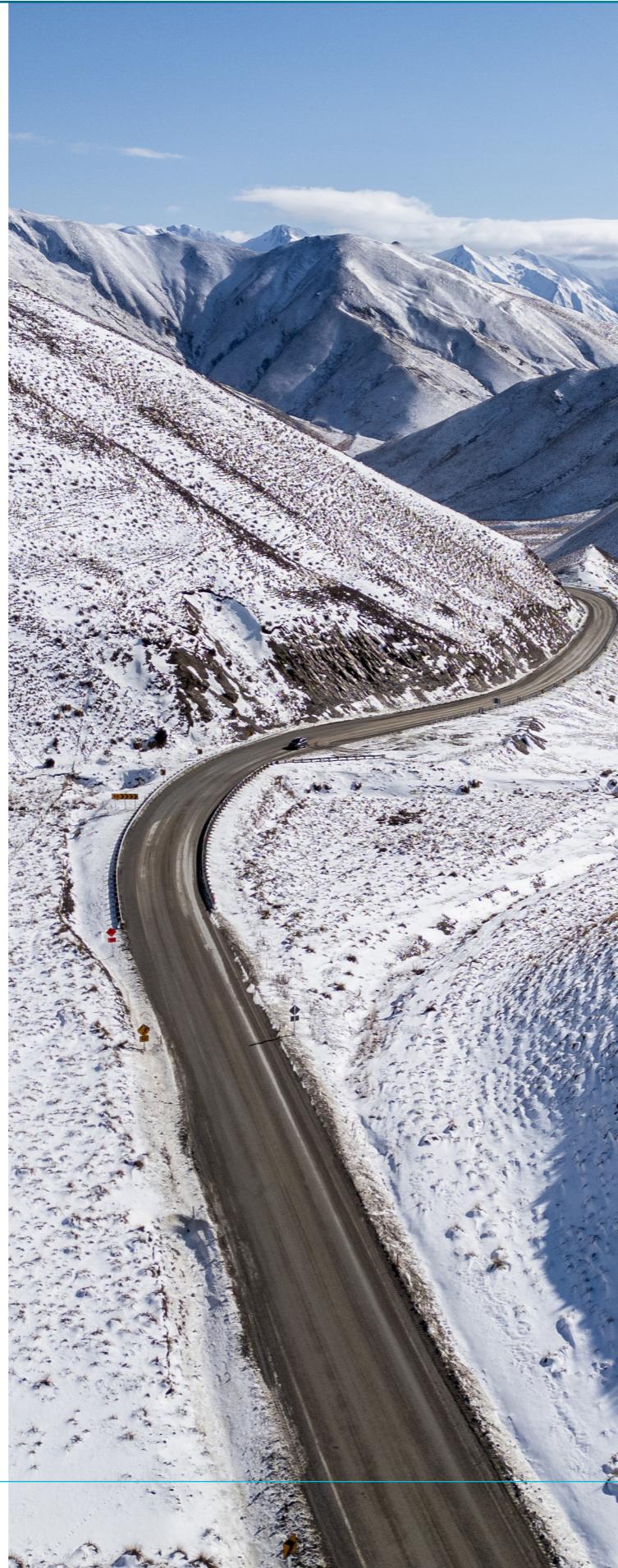
Lowest investment and resource focus ★

# Improving our asset management system

We plan to continuously improve areas of our asset management system to achieve our asset management objectives.

The following areas are the focus for the next 3 years:

- Complete for each asset class, a Lifecycle Asset Management Plan (LAMP) which sets out the relevant tactical approach to asset management and to systemise improvements.
- Complete our library of standard designs for use in both maintenance, operations and renewals activities, as well as capital development activities.
- Complete and implement the Integrated Delivery Model for maintenance, operations and renewal activities. In the first instance this includes re-contracting the physical works delivery, completing version 1.0 of the National Tactical Plan (NTP), and underpinning Regional Tactical Delivery Plans.
- Complete the development of a simplified and integrated level of service and performance management framework, aligned with the One Network Framework (ONF).
- Implement the Asset Management Data Standard.
- Bring Australasian expertise to our asset management and systemise the way we draw on approaches of our Australian State Road Authority peers.



# Management review

## State Highway Asset Management Policy

The policy, having now been documented, will be implemented and maintained. It will be communicated to all relevant stakeholders and will be reviewed periodically to ensure that it remains relevant and consistent with NZTA's organisational objectives as described in Arataki.



The Asset Management Policy will be reviewed every 3 years and updated where necessary.



The Asset Management Policy will be approved by the Chief Executive.

## State Highway Asset Strategy

The State Highway Asset Strategy will be reviewed every 3 years and updated where necessary by the Lead Advisor, Strategic Asset Management.



The State Highway Asset Strategy will be approved by the Chief Executive.

## State highway asset management plans

The asset management plans will be reviewed every year and updated where necessary, including the:

- State Highway Activity Management Plan (SHAMP)
- National Tactical Plan (NTP)
- Lifecycle Asset Management Plans (LAMPs)
- Regional Tactical Delivery Plans.

Reviews will specifically include:

- continued alignment with current Asset Management Policy and State Highway Asset Strategy
- significant changes in service level achievement or targets
- significant changes in demand and future forecasts, and implications for the service levels
- significant changes in identified risks and the management of these risks
- significant changes to the asset portfolios
- significant changes to the service delivery models
- updated works programmes and associated financials
- asset management improvements implemented through the improvement programme.

The asset management plans will be approved by the Chief Executive.

NZTA's performance against its levels of service targets will be monitored and formally reported annually to the Executive Leadership team and Board. All non-compliances will be examined and the necessary improvement plans implemented.