

Asset  
Management  
Plan  
Summary

2018



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# Strategic alignment

## Auckland's infrastructure

The services provided by well-functioning infrastructure networks underpin Auckland's success as a great place to live, visit and invest. The Auckland Council Group is responsible for prudent management of these community assets, and includes Auckland Transport (AT) which manages roads, footpaths and public transport links and Watercare Services which provides reliable water supply and wastewater systems. This infrastructure forms the essential foundation for billions of dollars of public and private investment which in turn supports the quality of life that Aucklanders enjoy.



## Strategic outcomes

Every three years, AT prepares an Asset Management Plan guided by the Mayor’s vision for Auckland.

AT’s 2018 plans reflect a level of consensus between Auckland Council, Central Government and the people of Auckland that has proved elusive in the past.

They are guided by the three long-term infrastructure challenges and opportunities identified in the Auckland Plan, which are:

### Coordinating investment and planning to enable growth

Between 2013 and 2017, Auckland grew by more than 160,000 people, which is the population of Hamilton. Growth is both a consequence of Auckland’s success, and a contributor to further successes – Auckland is still a small city by world standards, and NZ needs an international city that can attract and retain the best and brightest people.

To keep up with the demands created by population growth, AT is accelerating its investment, especially in public and active transport, and optimising the existing network to improve safety and address traffic congestion.

### Enhancing the performance of Auckland’s infrastructure

AT recognises the urgent need to improve the safety performance of our transport system, and is working with Auckland Council and Central Government to make our busy roads safer for all road users.

Our city is built between two harbours, which is part of our world-class quality of life but also means that transport and other infrastructure networks need to fit within tight physical constraints and meet high environmental standards.

Auckland’s Mana Whenua entities help and advise AT in their role as Kaitiaki, and guide us in sustaining and protecting our environment, and keeping our connection with the past alive as we build for the future. Safeguarding the quality of water is of real concern, and stormwater from roads is an important part of this.

Mana whenua also advise us that lack of affordable transport choices is having a disproportionate impact on low income families.

### Creating resilient infrastructure networks

The infrastructure networks that make city life possible have been built over generations; in a complex, changing world these essentials cannot be allowed to fail.

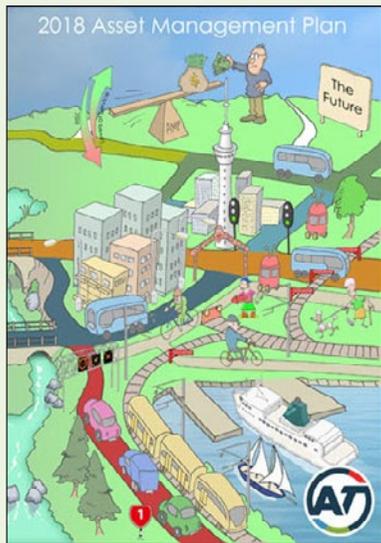
This means ensuring that risks are managed before they become problems, opportunities are identified, and the system is resilient to natural and man-made hazards. This includes being well-prepared to adapt to the impacts of climate change.

AT demonstrates prudent asset management by preparing and publishing this Asset Management Plan and its supporting documents.



# Role of the Asset Management Plan

**The Asset Management Plan demonstrates how Auckland Transport (AT) manages our complex transport network in the interests of the public.**



## The Auckland Transport Alignment Project

sets out an agreed strategic response for the development of Auckland's transport system over the next 30 years.



## The Auckland Plan

guides Auckland's future over the next 30 years.

Mayoral intent for the 10 year budget.



## The Government Policy Statement

sets out the priorities, objectives and funding levels for transport aligned to Government expectations.



## The Regional Land Transport Plan

sets out the programme of transport improvements for Auckland.



## The Regional Public Transport Plan

describes the services that are integral to Auckland's public transport network.



## The Long Term Strategic View

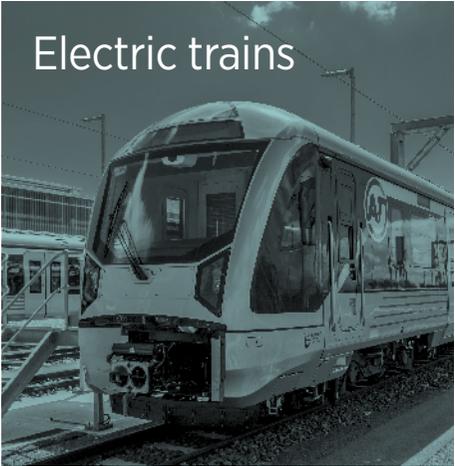
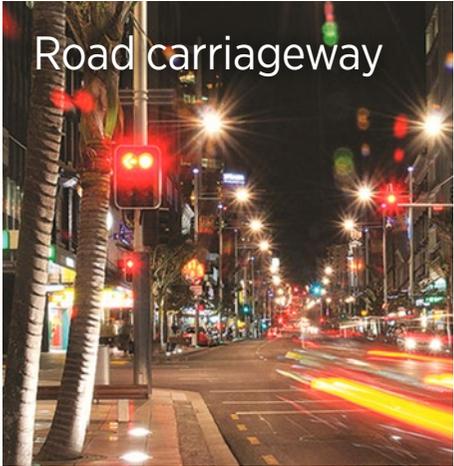
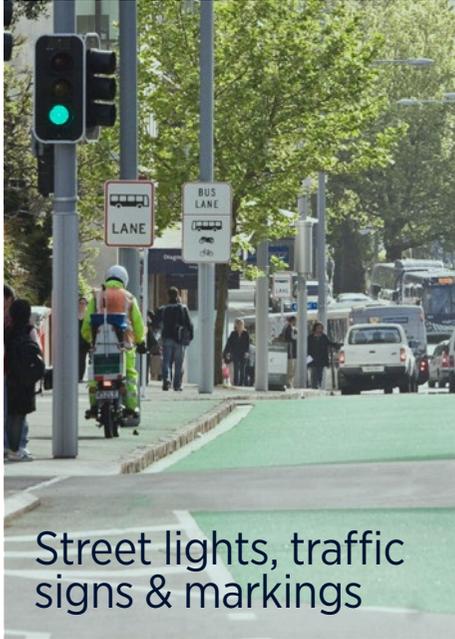
is prepared by the NZ Transport Agency and describes the key factors that will shape the transport system we need for the future.



## Other inputs

such as the cycling business case, present justification for investment.

# What we manage



# Snapshot of our transport network



**Carriageway**  
assets worth  
**\$8.3 billion**

7,391 km roads  
6,547 km is sealed and  
844 km unsealed



**Stormwater**  
assets worth  
**\$2.6 billion**

12,968 km stormwater channel  
59,833 catchpits



**Bridges, walls  
and structures**  
assets worth  
**\$1.5 billion**

1,260 bridges,  
3,827 retaining walls



**Footpaths and  
cycleways**  
assets worth  
**\$1.3 billion**

7,138 km of footpaths,  
326.9 km cycleways



**Street lighting**  
assets worth  
**0.2 billion**

111,739 streetlights



**Traffic systems,  
signs and markings**  
assets worth  
**0.2 billion**

694 signalised intersections  
112,200 road signs



**Parking**  
assets worth  
**0.2 billion**

128 off-street parking areas,  
34 parking buildings,  
818 parking payment units



**Public transport**  
assets worth  
**\$1.5 billion**

43 active rail stations,  
57 electric trains,  
2,337 bus shelters,  
9 busway stations,  
21 ferry wharves

## Transport network

assets are  
depreciating  
with time and use –  
at a rate of

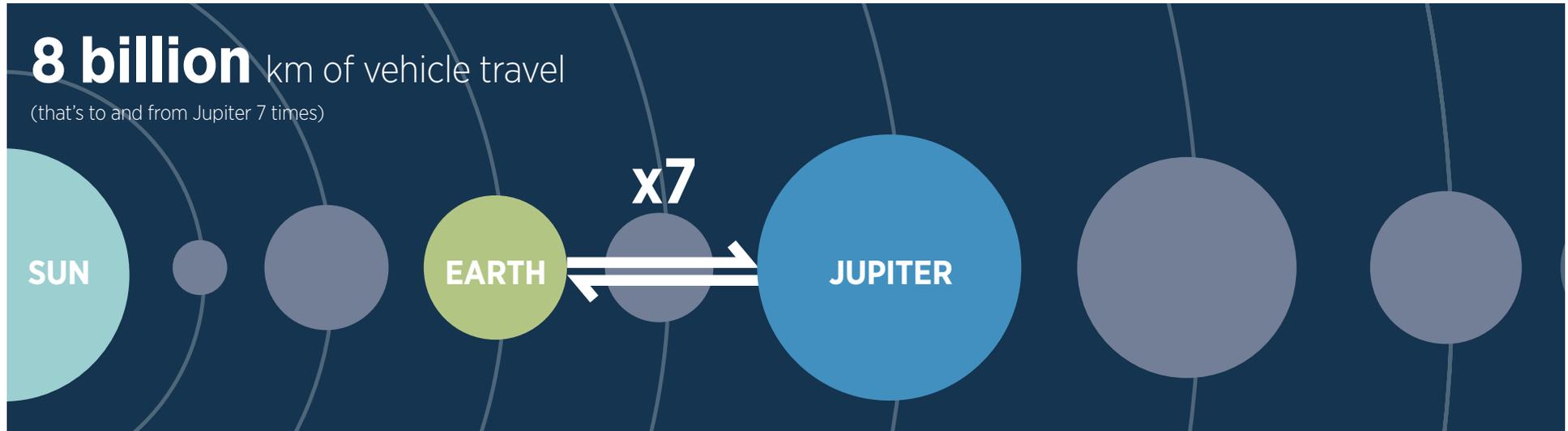
**\$264  
million**  
per year or

**\$725,000**  
per day

Note: excludes land and some short-lived assets eg. HOP card readers, IT assets.

# Services we provide

LAST YEAR, AUCKLANDERS USED THEIR LOCAL TRANSPORT NETWORK FOR:



AT manages and maintains the road and public transport networks that make all this possible.

# Services we provide cont.

## OUR GOALS AND LEVELS OF CUSTOMER SERVICE

### RESILIENCE

**OUR GOAL:** unplanned road closures are rare, and alternative routes are signposted when they do occur.

**2018 result:** all road closures had detours in place.



The last time residents were cut off completely from the road network was on parts of Great Barrier Island for a few days following a major storm in June 2014.

### ACCESSIBILITY

**OUR GOAL:** freight network is accessible to trucks.

**2018 result:** All bridges and carriageway on major freight routes are accessible to Class 1 heavy trucks.



### DRIVER COMFORT (ROAD SMOOTHNESS)

**OUR GOAL:** roads meet national standards for smoothness (are not uncomfortable/bumpy)

**2018 result:**

 **95%**

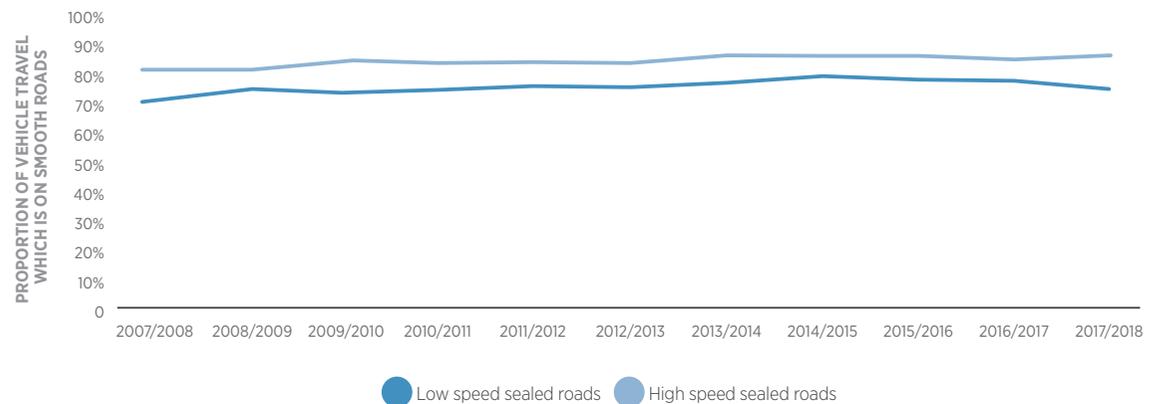
of all travel on high speed roads (70km/h or more), and

 **84%**

of all travel on lower speed roads is on smooth surfaces.

This level of service has been almost constant since 2007.

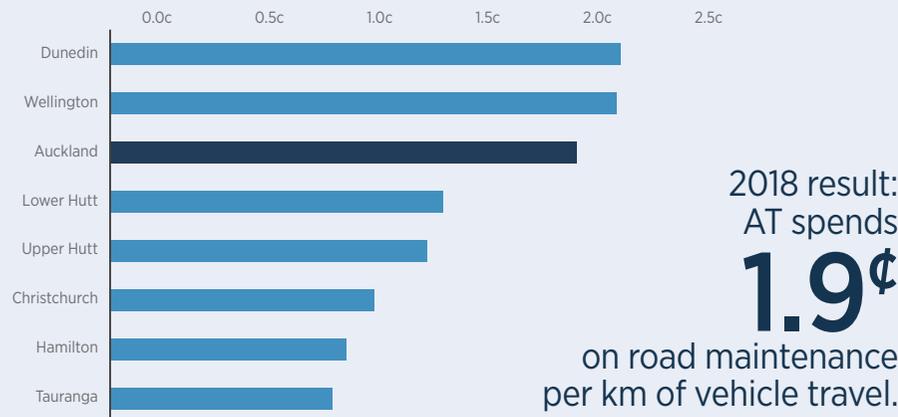
**FIGURE 1: PROPORTION OF TRAVEL WHICH IS ON SMOOTH ROADS**



## AFFORDABILITY

**OUR GOAL:** AT's costs for road maintenance and renewals, per km of vehicle travel, are reasonable when benchmarked against other NZ cities.

**FIGURE 2: PAVEMENT AND SEAL COST (CENTS) PER KM OF VEHICLE TRAVEL**



## LIFECYCLE ASSET MANAGEMENT

**OUR GOAL:** to ensure efficient and effective lifecycle management of assets.

2018 result:  
The conditions of assets is assessed through regular inspections.

Each asset type has an intervention level based on a fit for purpose level of service.

The impact of this AMP on asset condition is shown on pages 20-23.



## SUSTAINABILITY

**OUR GOAL:** to promote environmentally and economically sustainable practices.

Renewals projects that are adding value to wider AT and Government objectives include the replacement of streetlights with energy efficient LEDs, improvement of Franklin Rd, and many smaller safety and cycling improvements on existing roads.

Future sustainability initiatives include recycled construction materials, developing a climate change adaption plan, expanded use of stormwater treatment devices, and criticality and resilience assessment to not only promote strong environmental custodianship but also continue to support our social and cultural objectives.

**THE RECONSTRUCTION OF FRANKLIN RD IS AN EXAMPLE OF A RENEWALS PROJECT THAT CONTRIBUTES TO WIDER SUSTAINABILITY GOALS**



# Services we provide cont.

## OUR GOALS AND LEVELS OF CUSTOMER SERVICE

### SAFETY

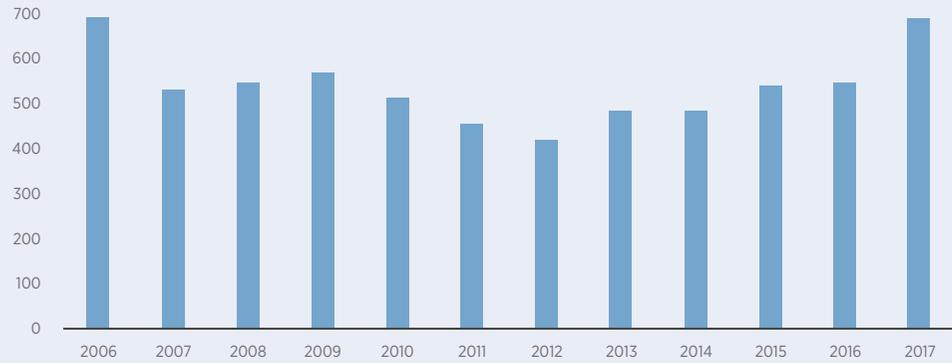
OUR GOAL: a safe network free of death and serious injury.

**690**

people were killed or seriously injured on Auckland local roads in 2017.



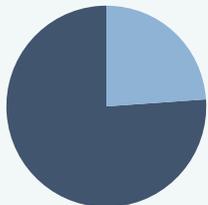
FIGURE 3: DEATH AND SERIOUS INJURIES ON AUCKLAND LOCAL ROADS



### TRAVEL TIME RELIABILITY

OUR GOAL: consistent and reliable travel times.

In the 12 months to July 2018,

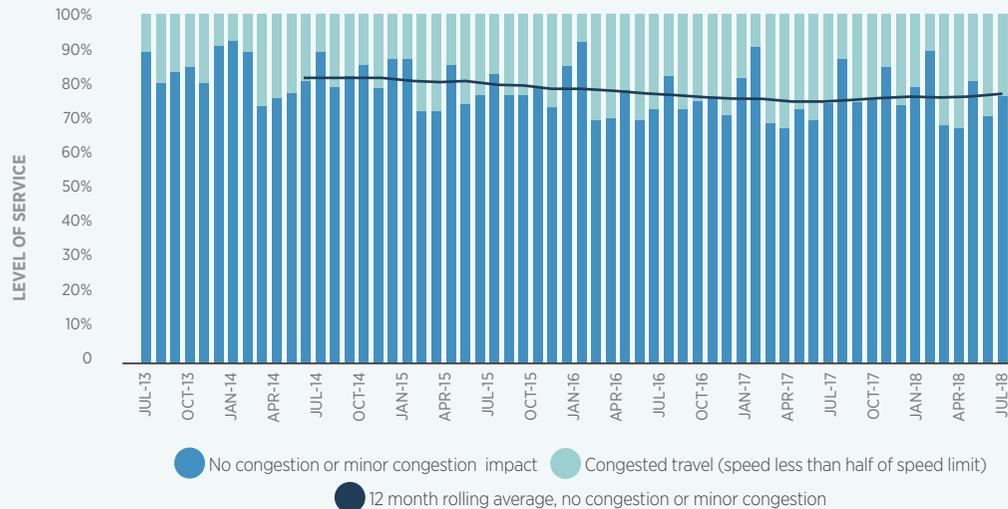


**24%**

of the regional and arterial road network was congested during the morning peak.

(average speed less than half of the speed limit)

FIGURE 4: MORNING PEAK ARTERIAL ROAD LEVELS OF SERVICE TO JULY 2018



# Risks we manage

## Growth and changing use of the network

Auckland's growth is a sign of success – people want to live here, and business is booming.

However growth does add to the cost of maintaining the road network, by adding more roads each year and because existing roads are used more intensively.

## AUCKLAND'S CONSTRUCTION BOOM GENERATES OVER 3 MILLION TONNES/YEAR OF FREIGHT TRAFFIC ON EXISTING ROADS



# Risks we manage cont.

## Extreme weather

- Intensification of the urban area means more runoff and more pressure on stormwater infrastructure.
- Flooding and slips are the major cause of damage to rural roads.
- In future, extreme weather events are expected to become more frequent, and AT also needs to plan for the impact of sea level rise which impacts coastal assets and the stormwater network.

**CLOSURE OF GREAT NORTH RD, NEW LYNN, JUNE 2017. INTENSIFICATION MEANS MORE STORMWATER RUNOFF, AND EXTREME WEATHER EVENTS ARE BECOMING MORE COMMON DUE TO CLIMATE CHANGE**



## Road safety

- Road trauma is increasing. This is especially true on urban arterial roads, which have to cater for more people and a greater variety of travel choices including pedestrians, cyclists and motorists.
- Rural road trauma is also increasing. Rural crashes typically involve loss of control and speed as contributing factors.
- Most serious injuries and many fatal crashes are the results of people making simple mistakes in an unforgiving road environment.

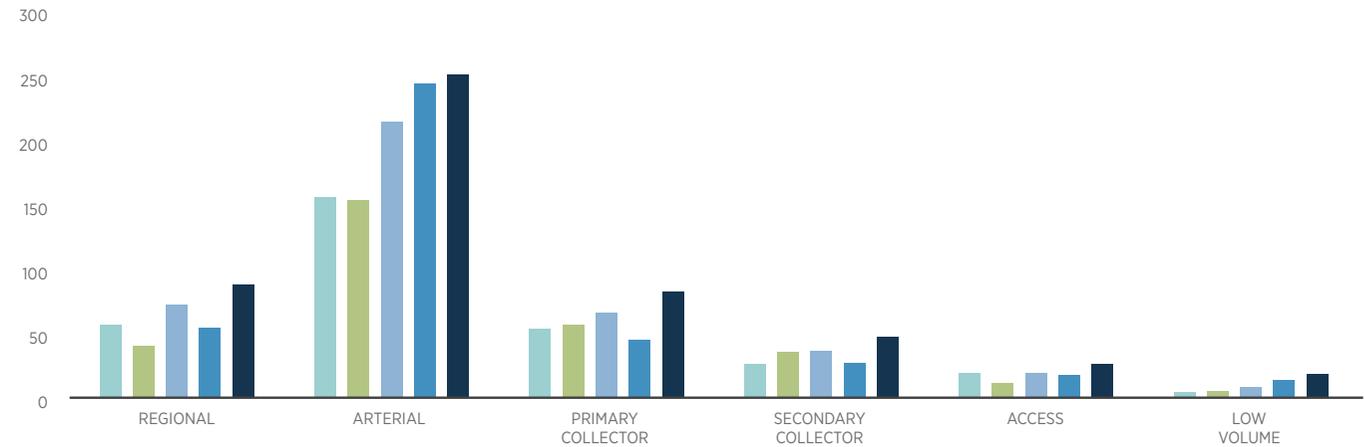
## Natural disasters

- All AT assets including bridges and buildings need to meet the relevant standards for seismic risk.
- AT works with the Auckland Lifelines Group to identify critical assets and to improve infrastructure resilience.

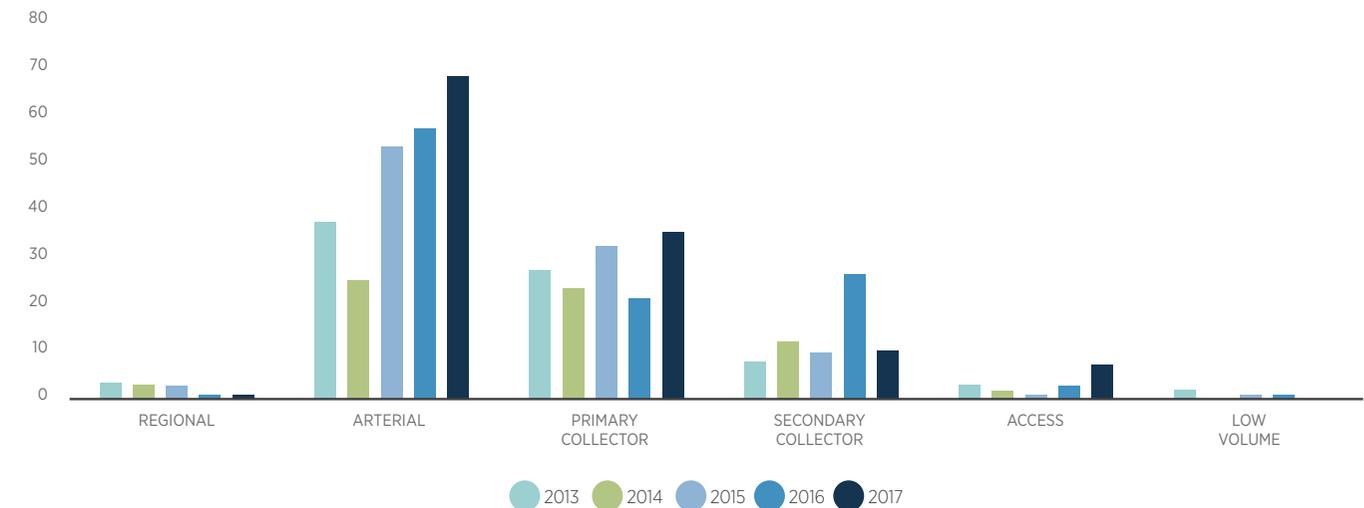
## Sudden failures of critical assets

- It is rare for critical assets to fail, because AT regularly inspects its assets and takes action early to manage risk.
- On the few occasions when critical assets do fail, costs include disruption to customers and damage to AT's reputation, as well as the direct costs to restore assets and services.

**FIGURE 5A: DEATHS AND SERIOUS INJURIES ON URBAN ROADS**



**FIGURE 5B: DEATHS AND SERIOUS INJURIES ON RURAL ROADS**



# Applying the One Network Road Classification

Good asset management is about providing a consistent, fit for purpose level of service while maximising value for money from the investment.

**To give effect to this expectation, AT has used:**

- The One Network Road Classification (ONRC). This framework classifies New Zealand roads based on:
  - traffic volumes;
  - connections to important destinations like hospitals, airports or ports
  - tourist routes; and
  - roads that provide the only access for communities.
- The ONRC customer levels of service, and performance indicators. These inform how AT will make its investment decisions, and enable comparisons with other road controlling authorities.

In this AMP, AT has worked with the NZ Transport Agency and other NZ road authorities to ensure our roads are being managed consistently.

**Application of ONRC standards has resulted in:**

- No change to maintenance standards including road sweeping, pothole fixing and drain clearing.
- No change to renewal standards on Regional and Arterial roads - the roads shown in red and yellow on the map.

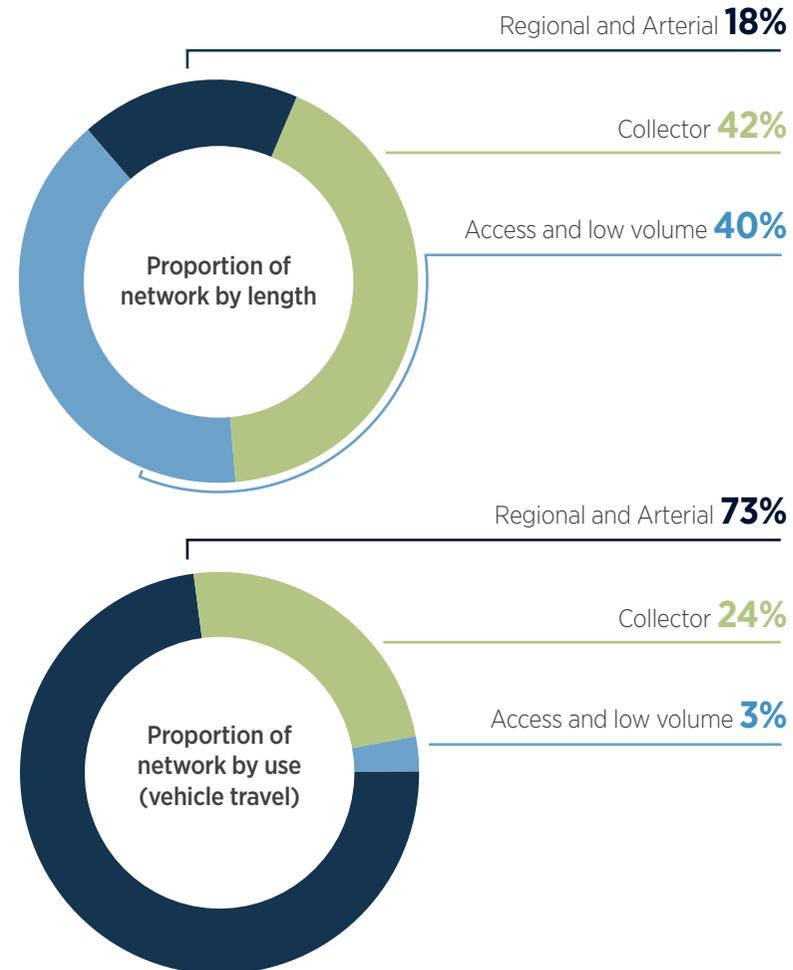
As per our pavement strategy these roads will be renewed when more than a quarter of the surface is uncomfortable for drivers, or visibly affected by cracking, rutting or other deterioration.

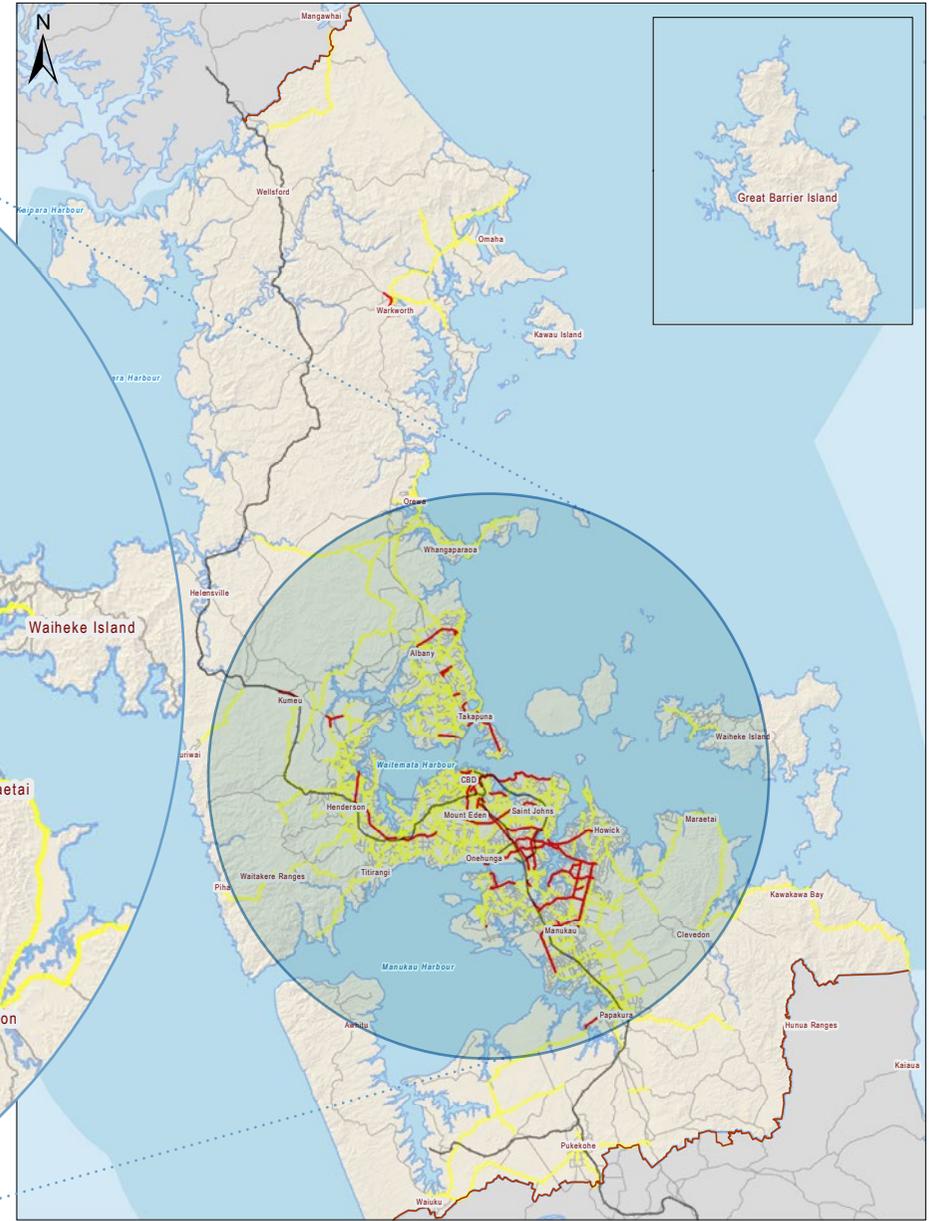
- On local or collector roads, some assets could stay in poor condition for up to two years provided there is no risk to safety or to long term costs.

**We expect that most customers will not notice this change. This is because Aucklanders do most (73%) of their travel on Regional and Arterial roads.**

AT does not apply the ONRC levels of service to some assets, that it classifies as high risk - for example bridges and traffic signals. It is never acceptable for these assets to be in very poor condition.

**FIGURE 6: LENGTH, AND VEHICLE TRAVEL, ON AUCKLAND LOCAL ROADS BY ONRC CLASSIFICATION**





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		<p><small>This map/plan is illustrative only and all information should be independently verified on site before taking any action. Copyright Auckland Transport, Land Parcel Boundary information from LINZ (Crown Copyright Reserved). While due care has been taken, Auckland Transport gives no warranty as to the accuracy and completeness of any information on this map/plan and accepts no liability for any error, omission or use of the information. Height datum: Auckland 1946.</small></p>		

# Recommended investment requirements

Transport assets have a finite life and must be continuously maintained and renewed, so the network as a whole will continue to deliver a fit-for-purpose level of service for current and future generations, while managing the loss of service potential.

## Maintenance investment

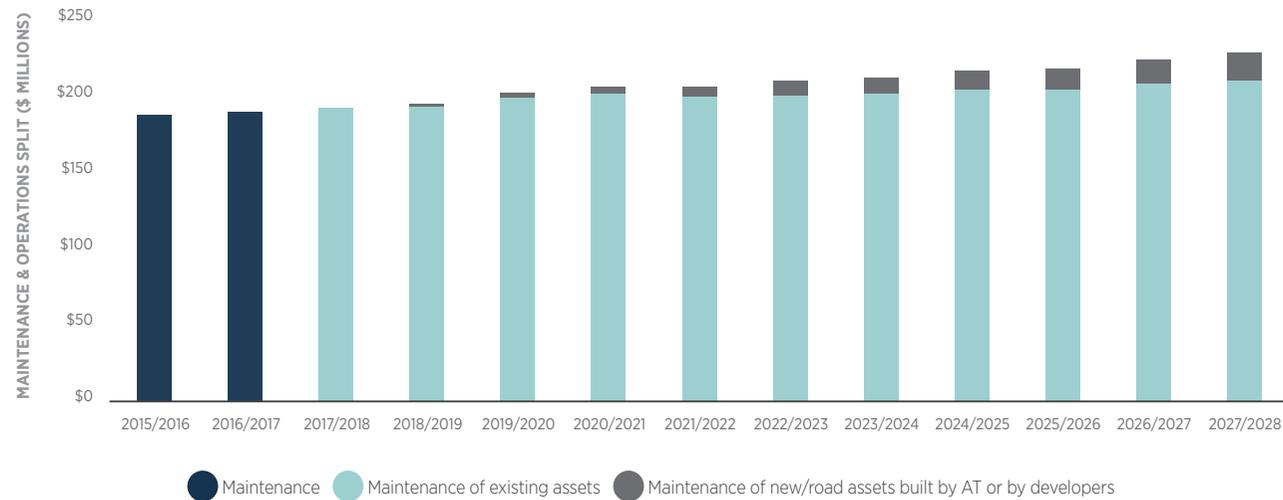
The costs of maintenance and the day-to-day operations of Auckland's transport network increase steadily as Auckland grows and new assets are added to the network.

### Major items in the maintenance budgets include:

- Maintaining the road pavement surface, for example by filling cracks and patching potholes.
- Maintaining road markings and replacing damaged road signs.
- Operating street lights and traffic signals.
- Operating and maintaining rail and busways stations, ferry wharves and bus shelters.

**Note:** maintenance investment requirements shown in figure 7 do not include the costs of planning, or of operating bus, rail and ferry services.

**FIGURE 7: RECOMMENDED MAINTENANCE INVESTMENT REQUIREMENTS – EXCLUDING INFLATION. THE COSTS OF MAINTAINING NEW ASSETS ARE HIGHLIGHTED GREY**



**FIGURE 8: RECOMMENDED RENEWALS INVESTMENT REQUIREMENTS – EXCLUDING INFLATION**



## Renewals investment

AT has chosen to accept that some low-risk assets on collector and local roads will be in poor condition, in order to adjust levels of service to nationally agreed One Network Road Classification principles.

The main impact of the change in levels of service is in the first three years, as shown in Figure 8. Over time, renewals costs return close to their current level and then continue to rise due to Auckland's expanding asset base.

**Note:** renewals investment requirements shown in Figure 8 do not include inflation or the costs of capital improvements eg. seal extensions.

# Approved funding

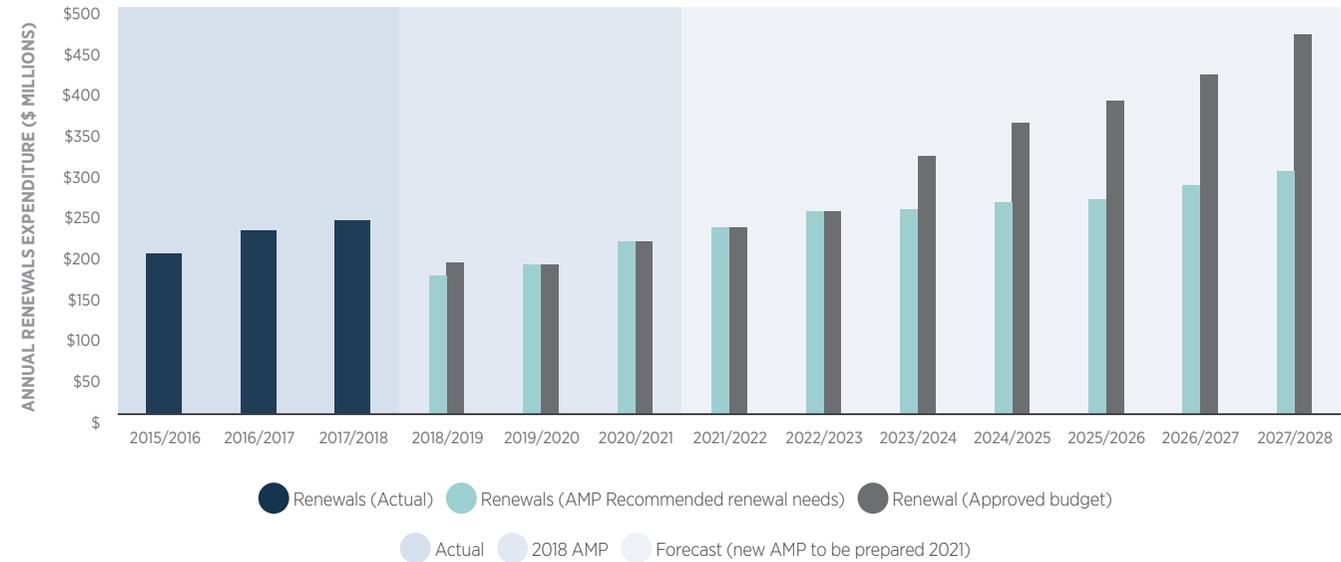
There are a number of important distinctions between recommended investment needs and approved budgets. An approved budget needs to:

- Balance to available funding.
- Include provision for inflation and cost escalations in future years.
- Take into account the cashflow requirements of funders.
- In local government, a budget must be approved using the process set out in the Local Government Act, which includes public consultation.

For maintenance and asset-based operations, approved budgets are identical to the recommended investment needs.

For renewals, the final, approved renewals budget is weighted towards the later years.

FIGURE 9: APPROVED (INFLATED) FINAL RENEWALS BUDGET VS RECOMMENDED (UNINFLATED) ASSET RENEWAL NEEDS



# Driving efficiency within funding envelope

**AT will seek efficiencies to mitigate the risks caused by the differences between approved budgets and recommended investment needs in the early years of the 10 year period which is shown in figure 8.**

## Looking at individual years, these risks are:

- In 2018/2019, the recommended AMP renewals budget is fully funded, along with provision for inflation and for the renewal of AT's corporate information systems.
- In the two years 2019/2020 and 2020/2021, the approved (inflated) budget is equal to the recommended (uninflated) investment needs.

During this period the recommended investment could potentially be challenged by inflationary cost pressures, and those associated with the renewal of corporate information systems. In practice, this means that either planned renewals will need to be adjusted or additional funding will need to be made available by reprioritising the capital works programme during these two years.

- In the following two years, 2021/2022 and 2022/2023, renewals budgets are also constrained. These are indicative forecasts as distinct from approved budgets, because a new Asset Management Plan will be prepared in 2021 with revised assets needs.
- From 2023, total budgets are increased, though this will need to be confirmed in the 2021 Asset Management Plan.

# What we will deliver for this investment

The AMP will achieve good stewardship of community assets by implementing an optimised programme for operation, maintenance and renewals to provide fit-for-purpose levels of service aligned with the ONRC framework.

This AMP will deliver :

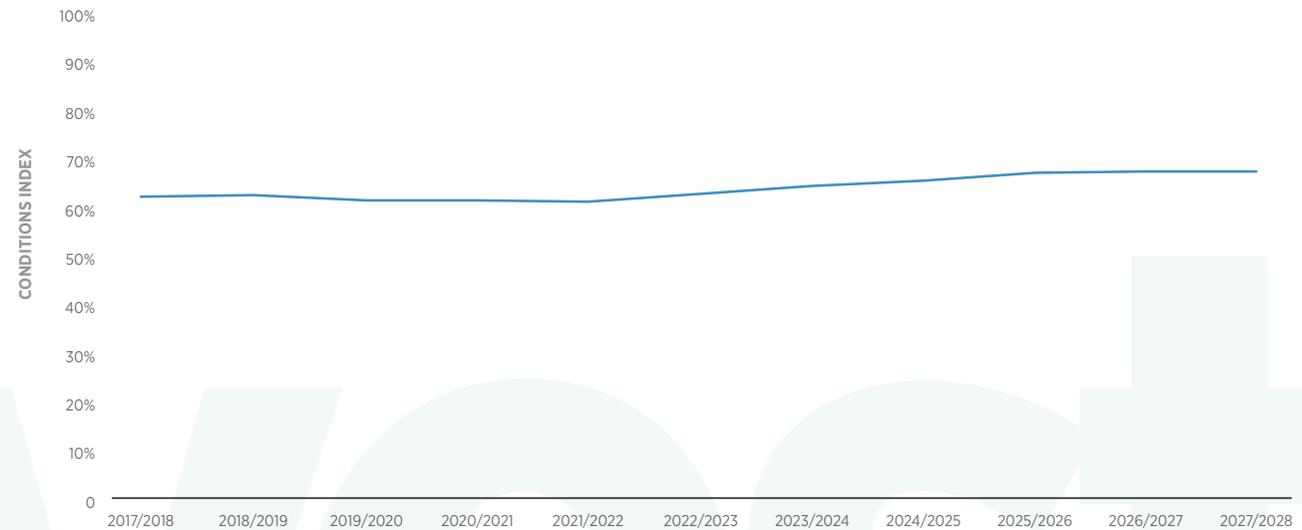


## Carriageway

- Improve skid resistance at priority sites to improve safety.
- Continue to maintain road surfaces so hazards such as potholes, bleeding and scabbing do not present a risk to road users.
- Maintain road rehabilitation levels of service for regional and arterial roads at a high level that ensures a comfortable, smooth driving experience, but reduce the programme on collector and access roads.
- Align reseal programme with fit-for-purpose levels of service, by targeting a higher proportion of reseals to regional and arterial roads.

Asset condition is based on regular inspections and can be summarised by the Condition Index as shown in Figure 10. Carriageway assets are projected to remain in a good condition over the 10 year period.

FIGURE 10: ROAD CARRIAGEWAY (CONDITION INDEX FORECAST 2019-28)



# What we will deliver for this investment cont.



## Stormwater

- Increase stormwater renewals and target underground assets as distinct from kerb and channel.
- Proactively manage flooding risks to properties.



## Bridges, walls and structures

- Continue to maintain and renew bridge components, taking into account the ONRC classification of the road.



## Footpaths and cycleways

- Maintain safe, connected walking and cycling links, so fewer people choose to travel by car for short journeys.



## Streetlights

- Improve lighting levels with the rollout of energy efficient LED lighting, especially in areas with high pedestrian use.



## Traffic systems

- Actively manage traffic signals to optimise travel times and travel time reliability.
- Expand AT's network of bus and high-occupancy vehicle lanes where this will improve the overall productivity of congested roads.

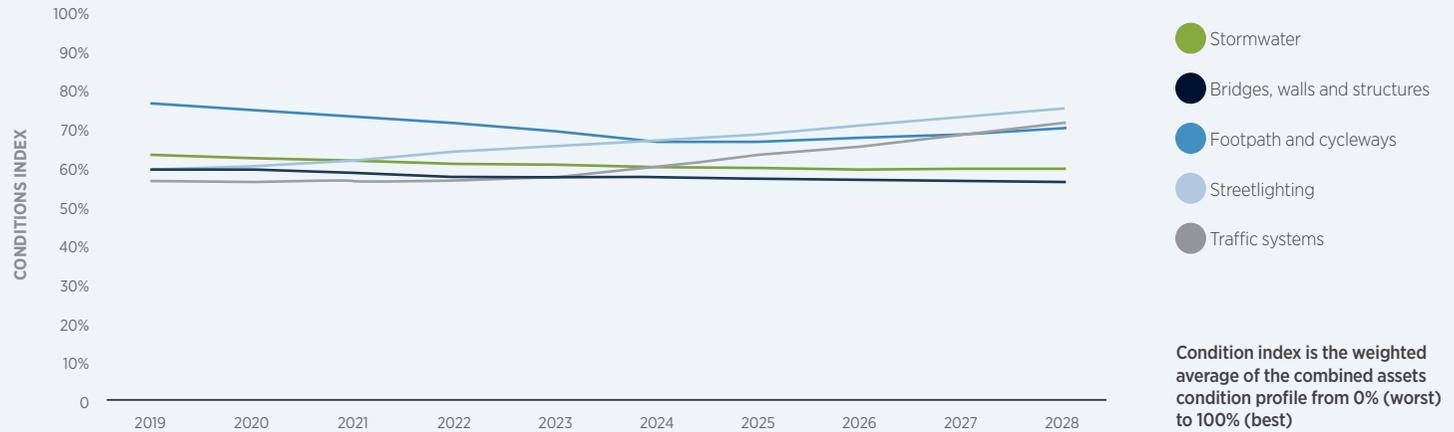


## Parking

- Manage AT's parking assets to a fit for purpose level of service.

# What we will deliver for this investment cont.

**FIGURE 10: CARRIAGEWAY ASSOCIATED ASSETS (CONDITION INDEX FORECAST 2019-28)**

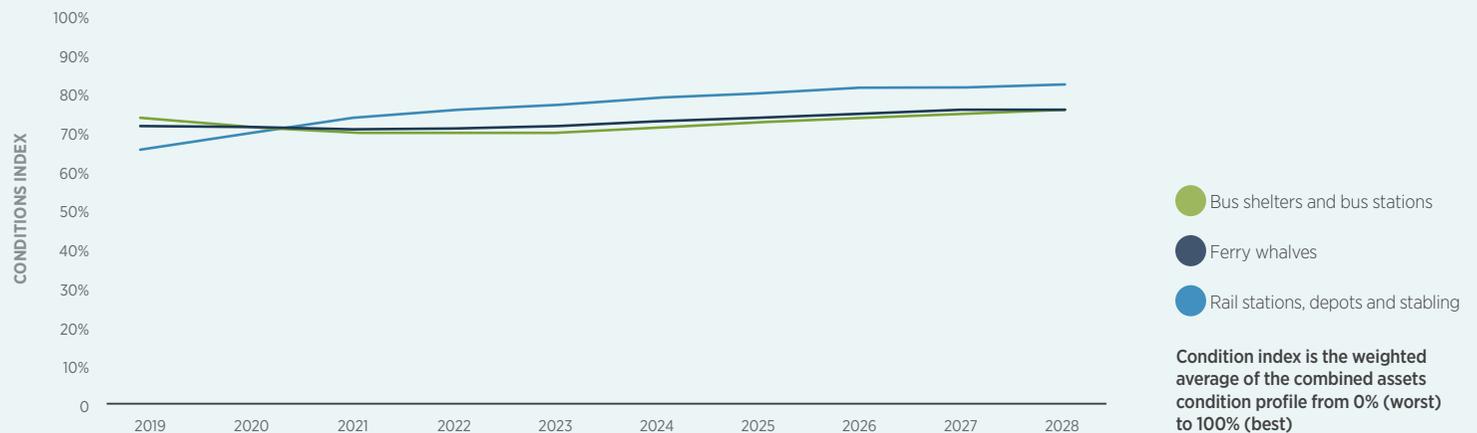


**FIGURE 10: PUBLIC TRANSPORT (CONDITION INDEX FORECAST 2019-28)**



## Public transport

- Provide a high level of service on public transport so more people choose to leave the car at home.



# The future

## Our current asset management initiatives will deliver the strategic outcomes of the Auckland Plan by:



### Putting safety first in everything we do

- Ensure renewed assets meet the latest safety standards
- Integrate renewals with safety improvements.



### Enhancing our understanding of the costs of growth

- Traffic growth
- Development and urbanisation
- Heavy vehicles
- Higher customer expectations.



### Comprehensive assessment of critical assets, risks and resilience

- Identify critical assets
- Asset based risk analysis
- Resilience rating of critical assets.



### More accurately predicting demand, and understanding capacity

- Location and timing of traffic growth
- Network “bottlenecks”
- More walking and cycling.



### Continuing to improve our data on asset condition and performance

- Use of new technologies
- Automation of processes
- Improved data capture.

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