



Transport Asset Management Plan

Full report

2024



Read me first: what it means that this document has been approved for retention by Auckland Council

Status of this document

On 6 May 2026, the New Zealand Government passed the Local Government (Auckland Council) (Transport Governance) Amendment Act. This legislation changed transport decision-making and responsibility for Auckland.

As part of this legislation, Auckland Council was required to review all transport-related and in-force Auckland Transport policies and plans to decide whether to retain, amend or revoke the policy or plan.

On 21 September 2026, Auckland Council approved the retention and transfer of this document to the council. In accordance with the Act, the document continues in effect until it is reviewed, replaced, or revoked.

This document remains in effect but should be considered alongside Auckland Council's current strategic direction and statutory transport planning requirements.

Alignment with Auckland Council group strategic direction and transport planning requirements

Auckland Council current strategic direction provides the wider context for how this document should now be interpreted and applied. This includes relevant Auckland Council strategies, policies, plans, investment decisions, regulatory settings, and local board direction.

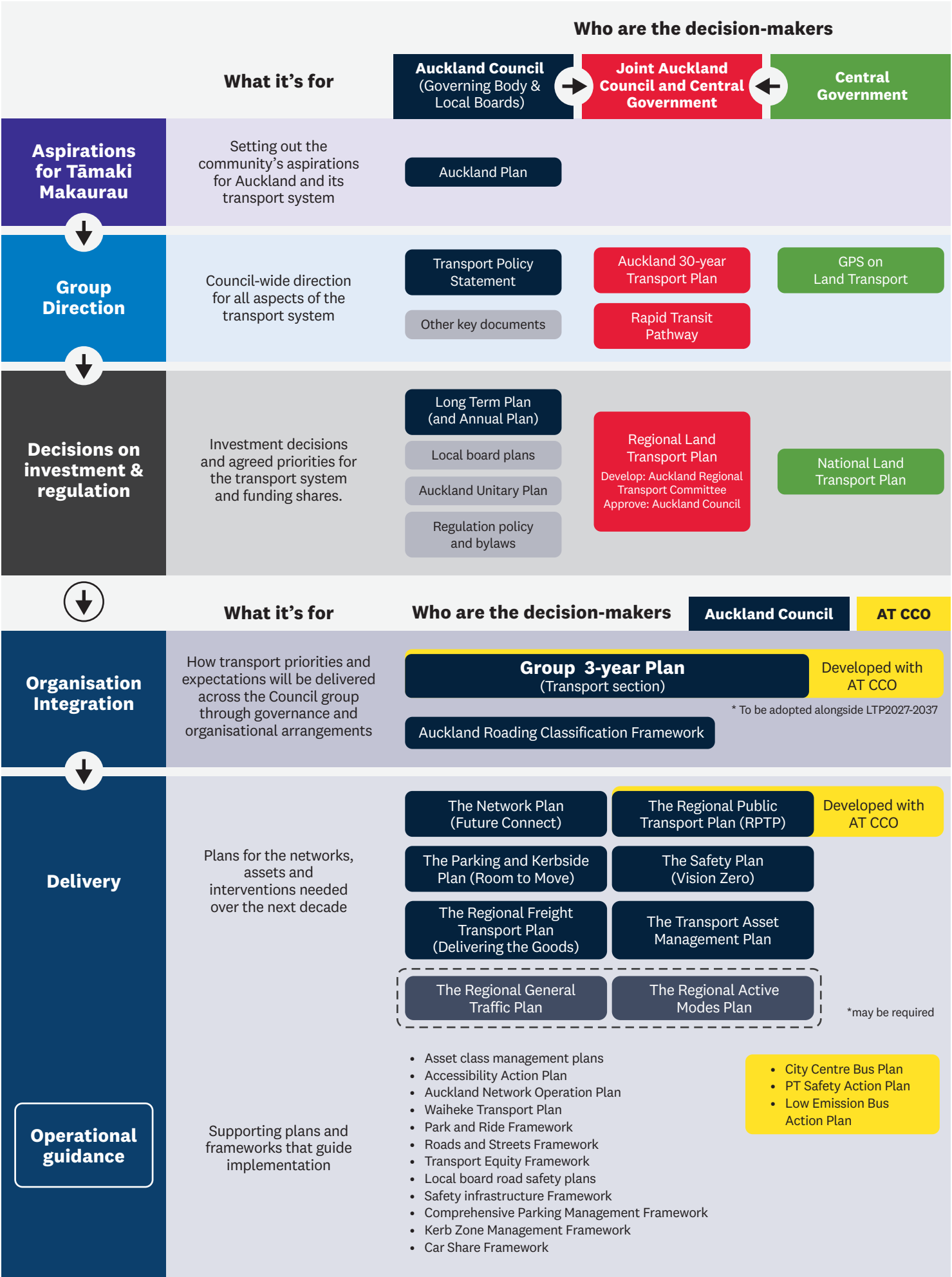
Transport planning is also guided by legislation and related planning documents introduced through the reforms. This includes the Auckland Council Transport Policy Statement, the Auckland Regional Transport Committee, the 30-year Transport Plan for Auckland, the Regional Land Transport Plan, and related transport governance and planning requirements.

The Auckland Council Group Strategic Framework (Transport view), shown below, provides context for how transport-related strategies, plans and frameworks fit together. It is intended as an evolving guide and will continue to be refined as documents are reviewed and updated. The Transport Asset Management Plan was prepared under previous governance arrangements. While it remains in effect, the way it should be interpreted and applied, and its relationship with the broader framework today may differ from how it was originally intended. To ensure accurate interpretation, advice should be sought jointly from Auckland Council's Group Strategy and Transport Policy functions.

Auckland Council Group Strategic Framework

(Transport view)

Simplified view only. Documents often span multiple layers and relationships. Higher-order direction takes precedence. Seek guidance where interpretation is required. Subject to ongoing refinement.



Application within Auckland Council's shared governance model

Auckland Council's shared governance model allocates decision-making responsibilities between the Governing Body and local boards. The transport reform legislation changed how this model applies to transport by assigning additional responsibilities to local boards for local and collector roads, while arterial roads and specific precincts are wholly under the decision-making responsibility of the Governing Body.

The Auckland Roding Classification Framework determines the split in road type and therefore decision making, and shows individual road categories.

By retaining this document, the Governing Body confirmed that it remains part of Auckland Council's approach to transport planning and decision-making. It should be taken into account when Auckland Council plans, funds, regulates, and delivers transport services and infrastructure.

The Allocation of Decision-Making Framework sets out the respective responsibilities of the Governing Body and local boards. Local board decision-making responsibilities for local and collector roads include:

- **Parking and stopping controls:** Such as no stopping restrictions (broken yellow lines), angle parking, time restricted parking, parking zones,
- **Traffic Controls:** Such as community streets (community led play streets), pedestrian crossings, speed humps, speed limits,
- **Road corridor and network access permissions and conditions:** Corridor access approvals for events (excluding Eden Park events that impact arterial roads),
- **Property and landowner (road reserve) decisions:** Such as removal of hazardous encroachments affecting road safety, airspace and subsoil leases,
- **Infrastructure:** Such as footpaths and cycle paths (new or modified), installing monuments, removal of third-party structures.

Where local boards are responsible for decisions covered by this document, they should take it into account when making those decisions. The document does not change or limit local board decision-making powers.

2024 Transport Networks Asset Management Plan

Auckland Transport

Author: Asset Planning and Policy team

Version: September 2024

Document control

Revision	Date	Revision Details	Author	Reviewer	Approver
0.1	01/03/2024	Draft Lifecycle Management section	Shane Browne		
0.2	22/03/ 2024	Draft Risk Management section	Shane Browne		
0.3	04/04/2024	Draft Growth and Demand Section	Shane Browne		
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0.5	23/07/2024	Draft Lifecycle Management Plan section	Shane Browne		
0.6	26/08/2024	Draft Financial Summary section	Shane Browne		
0.7	28/08/2024	Draft Executive Summary and Introduction sections	Shane Browne		
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Executive Summary

The Purpose of this Plan

This Asset Management Plan (AMP) supports Auckland Transport's goal to meet the service levels agreed with ratepayers and asset users by managing the Transport Networks infrastructural assets cost-effectively for current and future customers.

By detailing Auckland Transport's infrastructural assets and outlining necessary actions, this document aims to support Auckland Transport's goal of providing agreed service levels in a cost-effective manner, while addressing known issues and future risks.

This document inputs and aligns to the Summary AMP, which in turn inputs to Auckland Transport's Regional Land Transport Plan (RLTP) – Auckland Transport's 10-year investment programme which aims to respond to the challenge of a growing population as well as Auckland Council and Central Government transport policy outcomes of being:

- Fast and connected – improvements that make public transport faster, more accessible and more reliable
- Resilience – investments that ensure our network is ready for challenges.
- Productive – projects that support regional growth and productivity.
- Safe – investments that support a network that gets everyone home safely.
- Sustainable – investments that help us reduce our transport emissions.

The Status of Our Assets

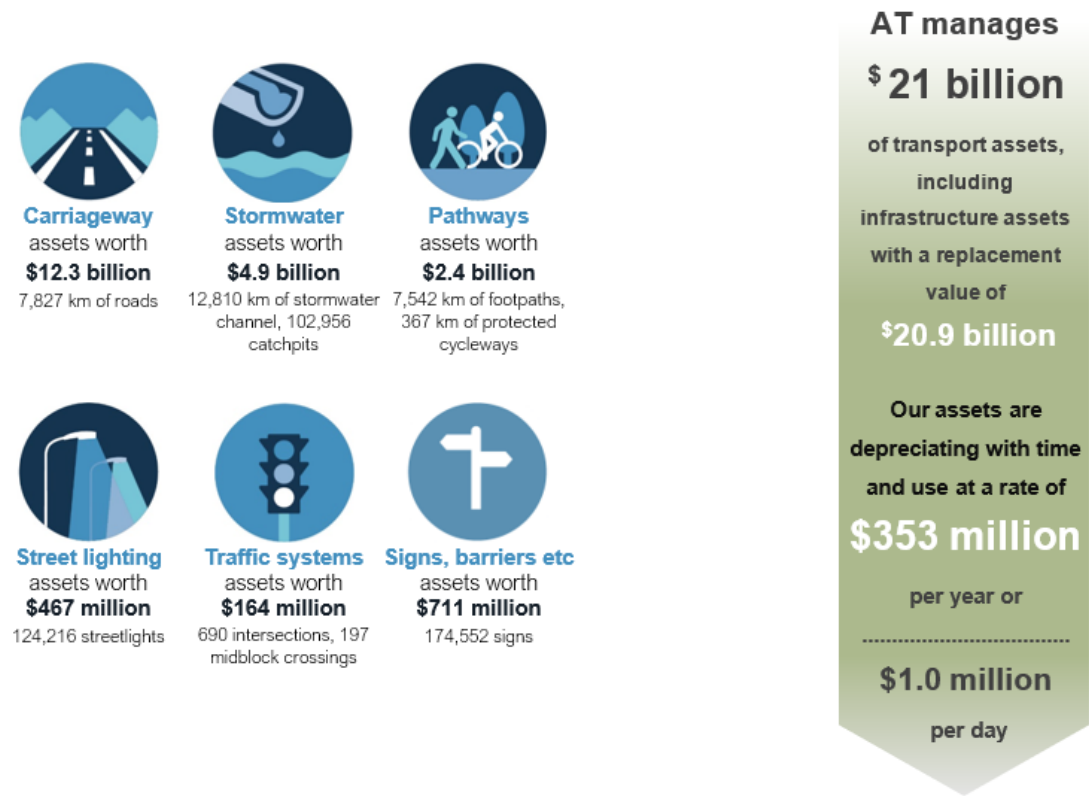
This plan covers the infrastructure assets supporting the provision AT's transport related services for the Transport Network, comprises the following asset classes:

- Carriageway
- Stormwater
- Pathways – footpaths and cycleways
- Street lighting
- Traffic systems
- Signage and marking
- Barriers

Collectively these assets have replacement value estimated at \$21 billion. The following figure provides a breakdown of the asset classes in Auckland Transport's Transport Network asset portfolio.

Figure 1: Snapshot of Auckland Transport’s Asset Portfolios

Snapshot of Auckland Transport’s Transport Networks as at June 2023



*All values are replacement cost as at June 2023, except total asset value which is depreciated replacement cost plus land, corporate and IT assets.

The following figure provide a snapshot the current condition and age profiles, for all the above assets.

Figure 2: Condition profile – Transport Network portfolio

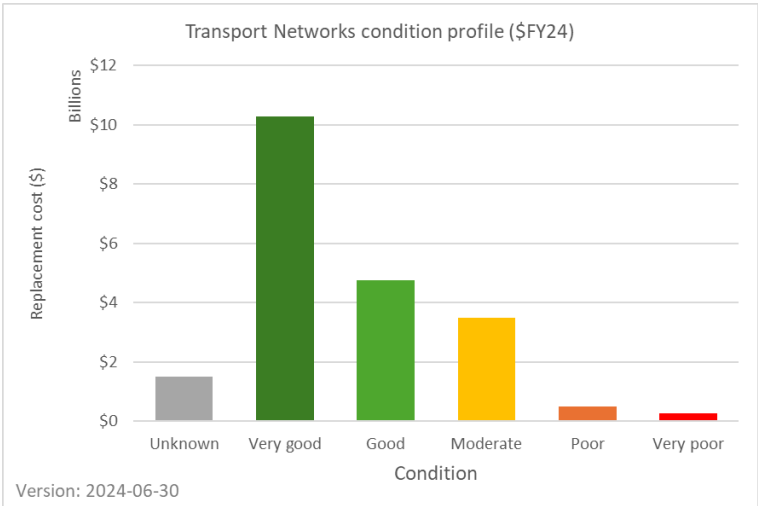
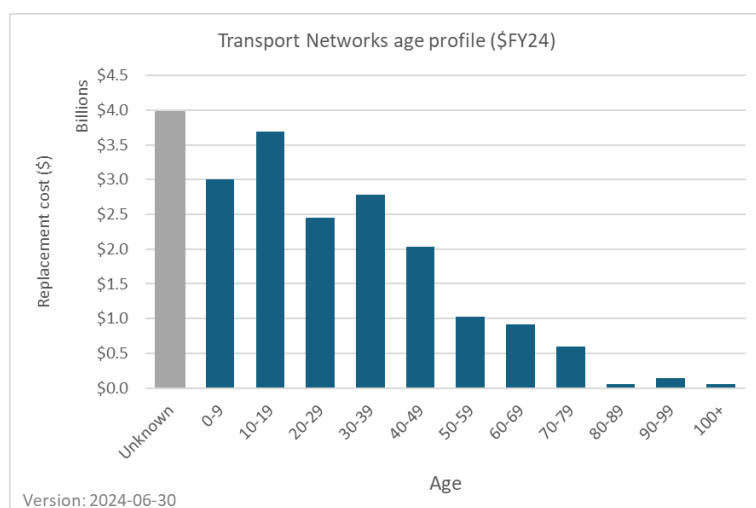


Figure 3: Age profile – Transport Network portfolio



Levels of Service

The condition of Auckland Transport’s infrastructure directly impacts the service levels experienced by Aucklanders. When infrastructure is taken out of service, for whatever reason, disruptions to daily routines occurs creating frustration and dissatisfaction with those relying on that infrastructure. Service levels that may have once been a point of pride for Auckland Transport now reflect the struggle to maintain aging and deteriorating infrastructure due to insufficient funding.

The likely service level consequences of planned budget are the continued degradation of Transport Network assets integrity.

Future Demand

As Auckland’s population continues to grow so does the demand for new and improved transport services. This demand places additional strain on Auckland Transport’s existing infrastructure and financial resources.

Urban brownfield developments like Kainga Ora housing intensification programmes and greenfield housing developments such as those in Ramarama (Auckland south) and Kumeu (north Auckland) all expect new and improved services to be provided by Auckland Transport.

Understandably, any new infrastructure will require the funding of downstream operational, maintenance and renewal activities to ensure that new infrastructure is kept in serviceable condition.

As more people and vehicles use Auckland Transport’s transport network infrastructure the resilience of existing infrastructure will be tested. So, to meeting these growth and demand challenges, funding permitting Auckland Transport aims to utilise a combination of approaches, including:

- additional Renewal activities (CAPEX – Renewal);
- uplifting Maintenance activities (OPEX);
- upgrading existing infrastructure (CAPEX – Service Level Improvement); and
- the provision of new infrastructure (CAPEX – New Works Growth).

Any demand management strategies are best focused on optimising the use of existing assets, reducing pressure on infrastructure, and promoting sustainable usage patterns. The following are example strategies Auckland Transport might consider employing, noting that this is not an exhaustive list of strategies.

Transport Network:

- Congestion pricing: Implementing congestion charges in busy areas to reduce traffic during peak times.
- Promoting active transport: Enhancing infrastructure for walking and cycling to encourage these modes of transport over car use.
- Intelligent transportation systems (ITS): Using technology to optimise traffic flow, such as adaptive traffic signal control and real-time traffic information.
- Maintenance scheduling: Conducting maintenance during off-peak hours to minimise disruption.
- Encouraging carpooling: Developing carpool lanes and incentivising shared rides to reduce the number of vehicles on the road.
- Public awareness campaigns: Educating the public on alternative transport modes and the benefits of reducing car use.

By employing demand management strategies like those above, Auckland Transport may effectively manage the usage and longevity of the infrastructure assets under their management, to ensure they better meet current needs while remaining sustainable for future generations.

Managing the Risks

Adding to the complexities around service delivery, meeting demand and building a resilient network of infrastructural assets, Auckland Transport also face further challenges likely to come from the impact of climate change. Extreme weather events and patterns, such as the Auckland Anniversary floods and Cyclone Gabrielle of 2023, will create public safety concerns and cause service disruptions, as happened during those events. This will put further pressure on Auckland Transport’s resources – funding and manpower.

To alleviate future risks, it is imperative to uplift Auckland Transport’s infrastructure resilience. This not only means uplifting the maintenance and renewals of existing assets, but also fortifying those assets against emerging threats.

Incorporating resilience into Auckland Transport’s asset management requires forward-thinking, planning and investment. These activities require additional funding and a commitment to long-term asset management planning.

Increased vulnerability to climate change and extreme weather events.	Without adequate funding, roads may deteriorate faster, becoming more susceptible to damage from extreme weather events such as heavy rainfall, flooding, and heatwaves. This can lead to higher maintenance costs and more frequent disruptions.
Accelerating the deterioration of aging infrastructure	Aging roads require more frequent maintenance to remain safe and functional. Without best practice asset management, the rate of deterioration will outpace repairs, leading to hazardous conditions, increased vehicle damage, and higher long-term costs.

Increased risk to natural hazards	Poorly maintained roads are less resilient to natural hazards such as earthquakes, landslides, and coastal erosion. This can lead to prolonged outages and higher reconstruction costs.
Higher Long-term financial costs	Delaying investment in asset management often leads to higher repair and replacement costs in the future. Reactive maintenance is typically more expensive than proactive strategies, leading to inefficient use of public funds.
Economic impact	Poor infrastructure management can hinder economic growth by disrupting transport and logistics, increasing travel times, and reducing productivity.
Decreased public safety and well-being	Unsafe roads and structures increase the risk of accidents and injuries. Reliable public transport is essential for ensuring equitable access to jobs, education, and healthcare. Neglecting asset management can disproportionately affect vulnerable populations who rely more on public infrastructure.
Environmental impact	Poorly maintained infrastructure can lead to environmental degradation. For example, damaged roads can contribute to increased emissions from vehicles stuck in traffic, and deteriorating public transport infrastructure can discourage its use, leading to higher carbon footprints.
Loss of public trust	Consistent failures and disruptions in infrastructure services can erode public trust in local government. Effective asset management is crucial for demonstrating accountability and stewardship of public resources.

To mitigate these risks, it's imperative to invest in best practice asset management strategies that include regular maintenance, timely upgrades, and resilience planning. This proactive approach not only enhances the longevity and reliability of infrastructure but also ensures that local governments can better serve their communities and adapt to future challenges.

Auckland Transport will of course endeavour to manage these risks, within available RLTP budget envelopes. The following actions aim to mitigate, transfer, or accept risks, enhancing the resilience and sustainability of infrastructure assets.

Lifecycle Investment Needs

The forecasted asset management lifecycle investment needed (Investment Needs) to provide the Transport Networks services covered by this plan includes:

- Operational costs (OPEX), power costs, graffiti removal, cleaning etc.;
- Maintenance costs (OPEX), proactive and reactive maintenance works;
- Renewal costs (CAPEX), also known as major upgrades; and
- the downstream consequential costs to maintain any new assets vested to Auckland Transport.

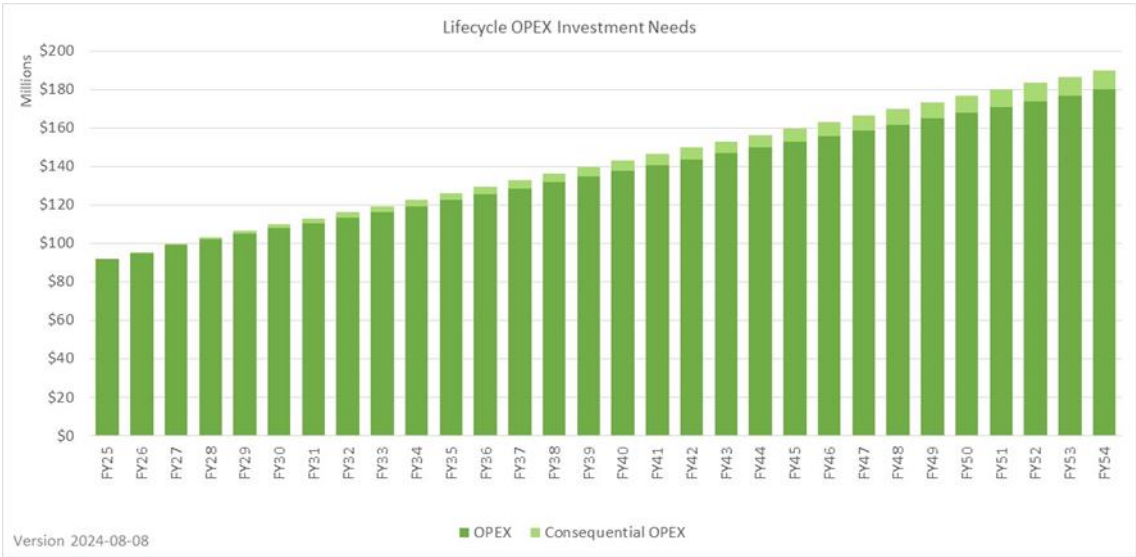
The forecasting of New Works Growth (CAPEX) and Service Level Improvements (CAPEX) is determined by Auckland Transport’s Strategy, RLTP and Corporate Finance teams, where:

- New Works Growth capital works encapsulates the programmes and projects that add new assets, in delivering potentially new services, to Auckland Transport’s fixed asset register. Examples include new roads, pathways, stormwater assets and associate additional assets to support AT’s other asset portfolios.
- Service Level Improvement capital works are focused on uplifting the quality and performance of current service levels being provided by Auckland Transport. Examples include uplifting the resilience of Auckland Transport’s infrastructure to cope with climate change impacts.

Lifecycle Maintenance and Operations (OPEX) Investment Needs

Based on Auckland Transport’s historical OPEX costs, the following graph presents current financial modelling and forecasting of lifecycle maintenance and operational costs for the Transport Networks asset portfolio.

Figure 4: Lifecycle OPEX Investment Needs



The following table details the average yearly OPEX expenditure needed to fund lifecycle operations and maintenance.

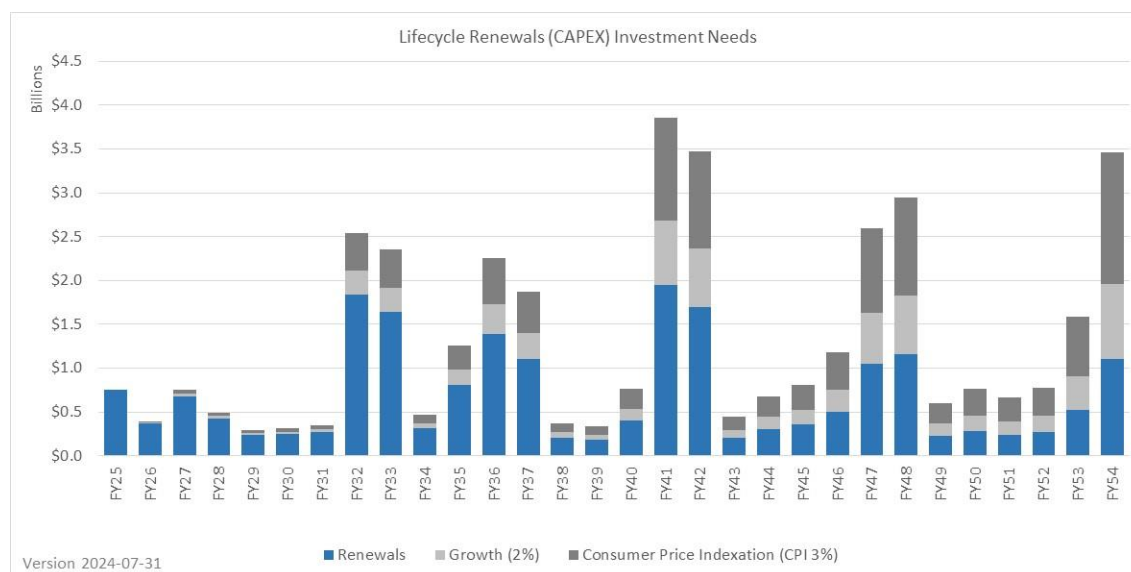
Table 1: Lifecycle OPEX Investment Needs

Funding period	Financial years	Total Investment Needs (\$FY24)
First 3 years of AT’s RLTP	FY25-FY27	\$0.29 billion
1 st decade	FY25-FY34	\$1.08 billion
2 nd decade	FY35-FY44	\$1.41 billion
3 rd decade	FY45-FY54	\$1.75 billion

Lifecycle Renewal (CAPEX) Investment Needs

Based on current asset condition and age data, the following graph presents the current financial modelling and forecasting of lifecycle renewals for the Transport Networks asset portfolio.

Figure 5: Lifecycle Renewal (CAPEX) Investment Needs



The following table details the average yearly CAPEX expenditure needed to fund lifecycle renewals and major maintenance works.

Table 2: Renewal (CAPEX) Investment Needs

Funding period	Financial years	Total Investment Needs (\$FY24)
First 3 years of AT's RLTP	FY25-FY27	\$1.90 billion
1 st decade	FY25-FY34	\$8.71 billion
2 nd decade	FY35-FY44	\$15.31 billion
3 rd decade	FY45-FY54	\$15.40 billion

The higher values in the second and third decade show the upcoming pavement rehabilitations coming up over the next 30 years.

Modelling data confidence

The following reflects the data confidence, on a five-point scale – 1 = Very High to 5 = Very Low confidence – held regarding the data and analytics presented above. This assessment is qualitative, based on professional judgement, as detailed below.

Table 3: Investment Needs data confidence

Data set	Confidence level	Founding data source	Comments
Valuation	Moderate	SAP – Fixed Asset Register	SAP is Auckland Transport's corporate financial system.
Depreciation modelling	Moderate	Corporate Finance Depreciation modelling	SAP is Auckland Transport's corporate financial system.

Data set	Confidence level	Founding data source	Comments
Historical, actual expenditure	High	SAP	SAP is Auckland Transport's corporate financial system.
Asset condition data	High	RAMM	Transport Networks
Asset age data	High	RAMM	Transport Networks
Investment Needs modelling/ forecasting	High	RAMM	Simple age and condition-based modelling are best appropriate practice.

Each of the above data sources have been qualitative rated as follows:

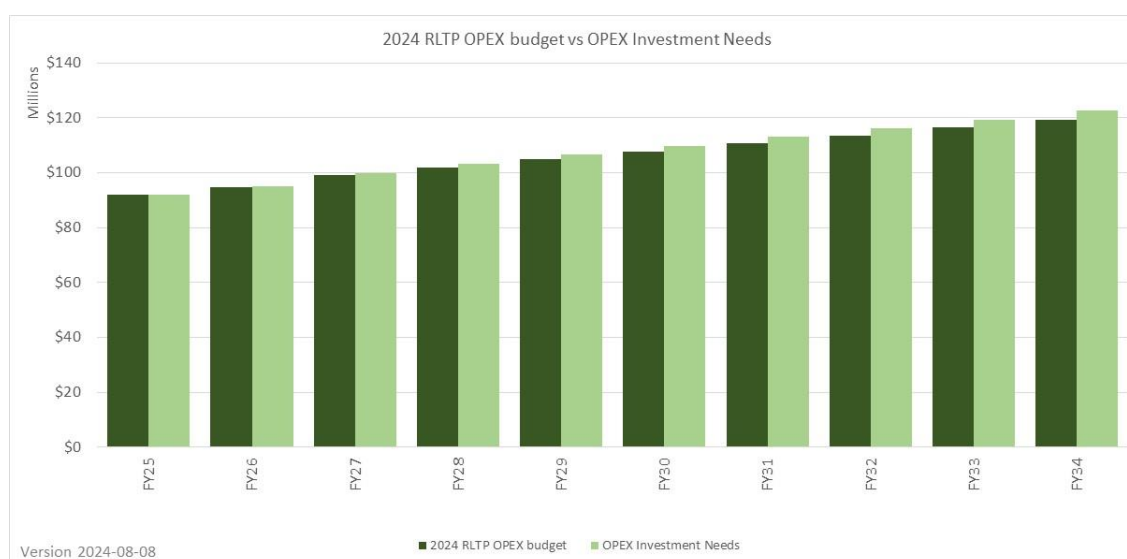
- Very high – qualitatively assessed as >80% data confidence
- High – qualitatively assessed as between 60-80% data confidence
- Moderate – qualitatively assessed as between 40-60% data confidence
- Low data – qualitatively assessed as between 20-40% confidence
- Very low – qualitatively assessed as <20% data confidence

Financial Plan

Approved 2024 RLTP funding

The following graph presents the approved RLTP OPEX budget.

Figure 6: 2024 RLTP OPEX budget vs OPEX Investment Needs



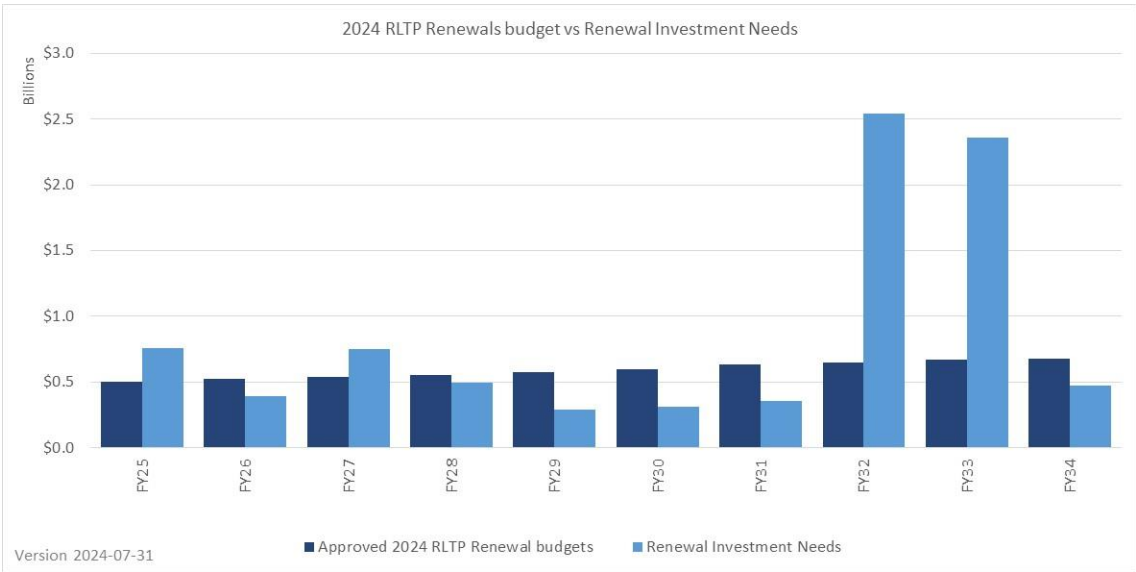
The financial impact of this level of OPEX funding is presented in the following table.

Table 4: Approved 2024 RLTP OPEX funding vs. OPEX Investment Needs

	3-year period (FY25-FY27)	10-year period (FY25-FY34)
2024 RLTP budget	\$286.13 million	\$1.06 billion
Lifecycle Investment Needs	\$287.26 million	\$1.08 billion
Funding consequence	-\$1.13 million [shortfall]	-\$20 million [shortfall]

Regarding Renewals (CAPEX), following graph presents the approved 2024 RLTP Renewal funding.

Figure 7: 2024 RLTP Renewal (CAPEX) budget vs Renewal Investment Needs



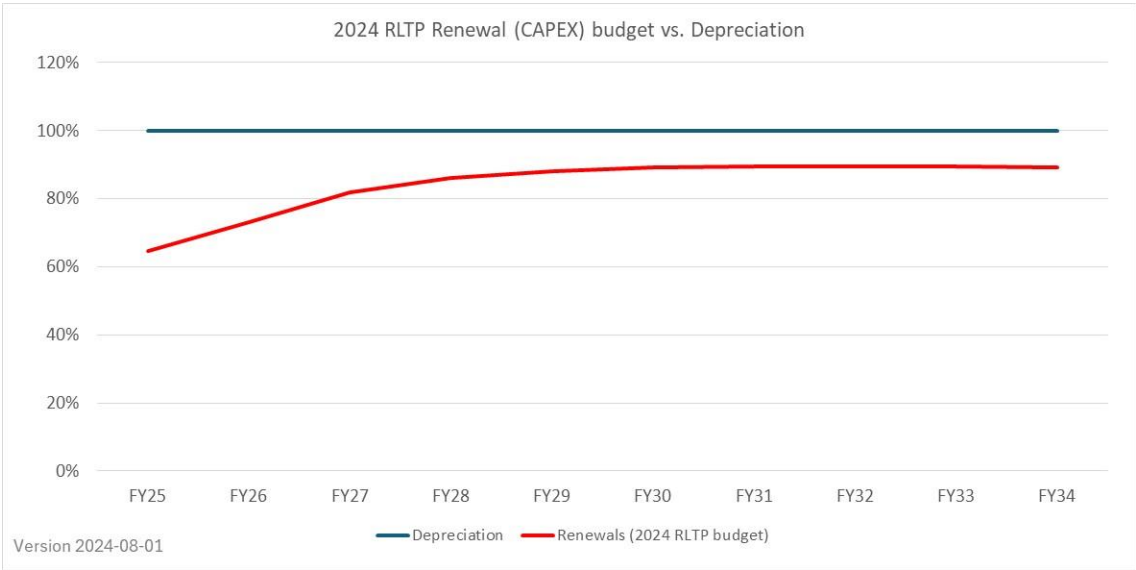
The following table shows the financial impact of this level of Renewals funding.

Table 5: 2024 RLTP Renewal (CAPEX) budget vs. Renewal Investment Needs

	3-year period (FY25-FY27)	10-year period (FY25-FY34)
2024 RLTP budget	\$1.10 billion	\$4.81 billion
Lifecycle Investment Needs	\$1.90 billion	\$8.71 billion
Funding consequence	-\$802.47 million [shortfall]	-\$3.90 billion [shortfall]

The following graph presents the estimated unfunded renewals gap – 2024 RLTP Renewal budget vs. forecasted Depreciation – for Transport Networks infrastructure.

Figure 8: 2024 RLTP Renewal budget vs forecasted Depreciation – Transport Networks infrastructure



As the above graph indicates, Auckland Transport Renewals (CAPEX) will not match forecasted Depreciation within the current RLTP funding period.

Funding consequences

The appropriate level of whole-of-life infrastructure asset management funding ensures the integrity and longevity of infrastructure under Auckland Transport's guardianship. By maintain asset integrity, Auckland Transport is therefore well placed to ensure delivery of service levels ratepayers and asset users value and have agreed to. Therefore, by investing in regular proactive asset management – maintenance (OPEX) and renewals (CAPEX) activities – Auckland Transport will:

- Prevent infrastructure integrity issues escalating.
- Better support a high level of service delivery to ratepayers and asset users.
- Be cost efficient and effective, for current and future generations.
- Ensure a reduced the level of risk being carried by the organisation.

Given the previously unfunded OPEX and Renewal (CAPEX) asset management works, the allocation of budget through Auckland Transport's RLTP development process is considered overall insufficient to ensure the integrity of all of Auckland Transport's infrastructure (in support the delivery of service levels). For the foreseeable future Auckland Transport can expect to carry a higher level of risk in relation to the transport network infrastructure under its stewardship. Indicators of this will be such things as:

- Increasing number of customer complaints.
- An overall decline in customer satisfaction.
- Infrastructure faults continue to increase.
- Emergency asset repairs take longer to resolve.

Introduction

Background

This plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over a 30-year planning horizon.

This plan is best read in consideration of other key Auckland Transport planning documents, including, but not limited to:

- Regional Land Transport Plan
- Asset Management Policy
- Strategic Asset Management Plan
- Asset Risk Management Plan
- Climate Change Adaptation Policy

Asset management maturity in Auckland Transport is assessed using the Commerce Commissions asset Management Maturity Assessment Tool (AMMAT). In 2024, Auckland Transport were assessed to have achieved a score of 2.4 out of a possible 4. Auckland Transport have a target of achieving a score of 3 overall.

Key stakeholders in the preparation and implementation of this plan are shown in the following table.

Table 6: Key stakeholders of this plan

Key stakeholder	Role in relation to this plan
Auckland Council, Waka Kotahi NZTA, and Local Boards	Representing the needs of community, ratepayers and asset users. The allocation of funding to meet objectives in providing sustainable Auckland Transport services while managing risks.
Auckland Transport Board and Executive Leadership team	Endorse the development and publication of this plan.
General Manager, Chief Engineer and Asset Management lead	Allocate the resources to drive the development of this key planning document.
Corporate Finance, Financial Reporting and RLTP team	Enabling financial integrity between the Fixed Asset Register, asset valuations, depreciation forecasts, RLTP budgets, Annual Plan budgets and Annual Reports.
Asset Managers	Develop 3-year Forward Work Programmes (FWP) for delivery based on the asset lifecycle analysis and guided by long-term financial plans. Ensure assets are regularly inspected and condition assessed.
Maintenance delivery teams	The deliver of renewal and maintenance FWP (Y0) to agreed budgets.

Goals and Objectives of Asset Ownership

Our goal for managing infrastructure assets is to meet the agreed level of service in the most cost-effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Defined level of services and the monitoring performance
- Managing the impact of growth
- Taking an asset management lifecycle approach
- Identifying, assessing and appropriately controlling perceived risks
- Ensuring financial integrity (asset valuations, RLTP, Annual Plan and Annual Reports)

Key elements of a best practice Asset Planning framework include:

- Understanding the service levels to be delivered
- Assessing the growth and future demand impacts
- Assessing and managing the risks
- Utilising best practice asset lifecycle management
- Financial planning
- Asset management process monitoring and improvement

Key references used in the development of this plan include:

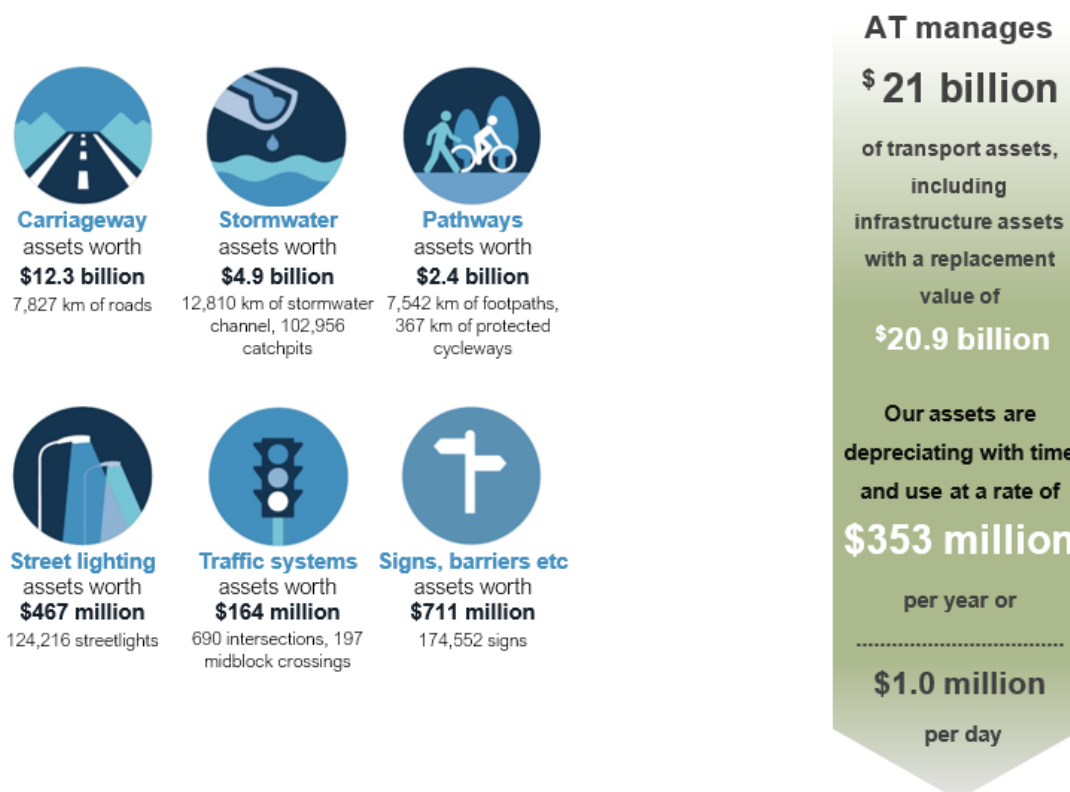
- The International Infrastructure Management Manual (IIMM), published by the Institute of Public Works Engineering Australasia (IPWEA)
- ISO 55000 suite as the international standard for Asset Management
- The NAMS+ tool, developed by IPWEA

Status of our Assets

The assets covered by this AM Plan are shown in the figure below.

Figure 9: Auckland Transport's Transport Network Asset Portfolios

Snapshot of Auckland Transport's Transport Networks as at June 2023



*All values are replacement cost as at June 2023, except total asset value which is depreciated replacement cost plus land, corporate and IT assets.

The collection of assets above are currently managed in three Asset portfolios, as tabled below.

Table 7: Auckland Transport's Transport Network portfolio and asset classes

Asset Portfolio	Asset Classes
Transport Networks	Carriageway, stormwater, pathways, streetlights, road barrier and fence, road furniture, traffic systems, surveillance devices, road signs, road marking, wayfinding etc.

These Asset Classes form the basis of reporting within this plan and provides a framework for structuring asset data in Auckland Transport's asset-related information systems to assist in collection of data, reporting information and making decisions.

Physical parameters

Carriageway (pavement)

The age profile of the pavement base, Figure 10, shows that approximately 32% of the pavement bases do not have a recorded construction date against them. Looking at the profile, of pavement bases with known construction dates, there is a linear spread of value against the age categories with a significant tail off when reaching the end of life.

Currently pavement bases are expected to last approximately 75 years but varies from a low of 60 years for high traffic carriageways to 87 years for more lightly traffic carriageways. Approximately 1% of Auckland Transport pavement base assets have exceeded their expected life.

The age profile of the pavement surface, Figure 11, shows that all pavement surfaces had a known constructed date. The majority of pavement asset are still young assets within the first 10 years of their life. It can be since that there is a tail off of assets as they reach the end of their life.

Currently pavement surfaces are expected to last approximately 15 years except for concrete surfacing that is expected to last for 43 years. Approximately 26% of Auckland Transport pavement surface assets have exceeded their expected life, excluding concrete assets Currently, all concrete surface assets are within their expected lives.

The age profile of the unsealed pavements, Figure 12, shows 70% of the unsealed pavements do not have a known construction date. Currently unsealed pavements are expected to last approximately 87 years. All of Auckland Transport unsealed pavement assets with known construction dates have not exceeded their expected life, however, this only accounts for 30% of assets.

Figure 10: Pavement Base age profile

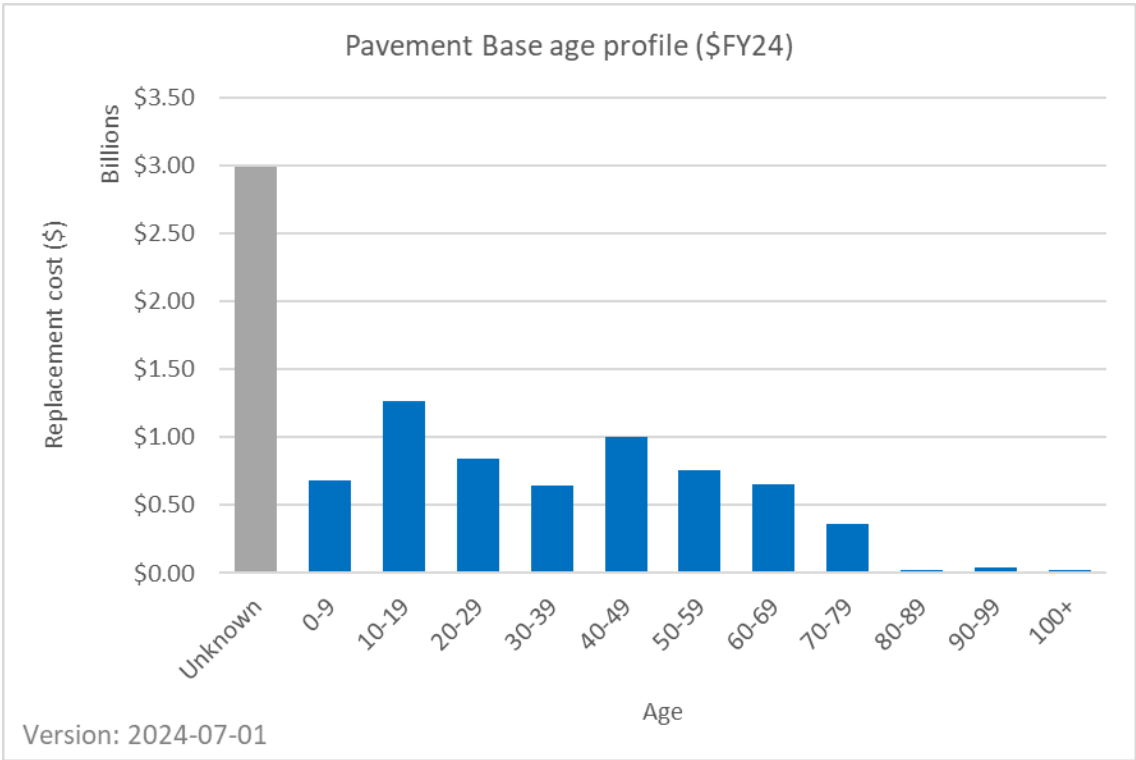


Figure 11: Pavement Surface age profile

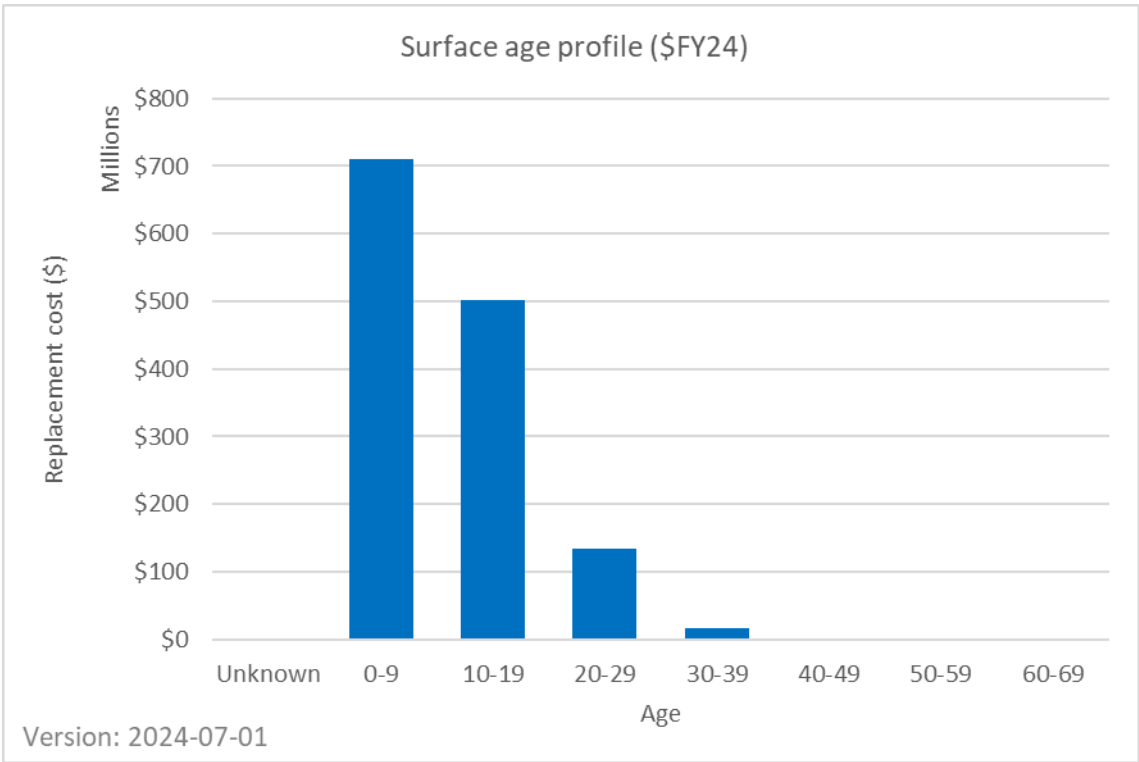
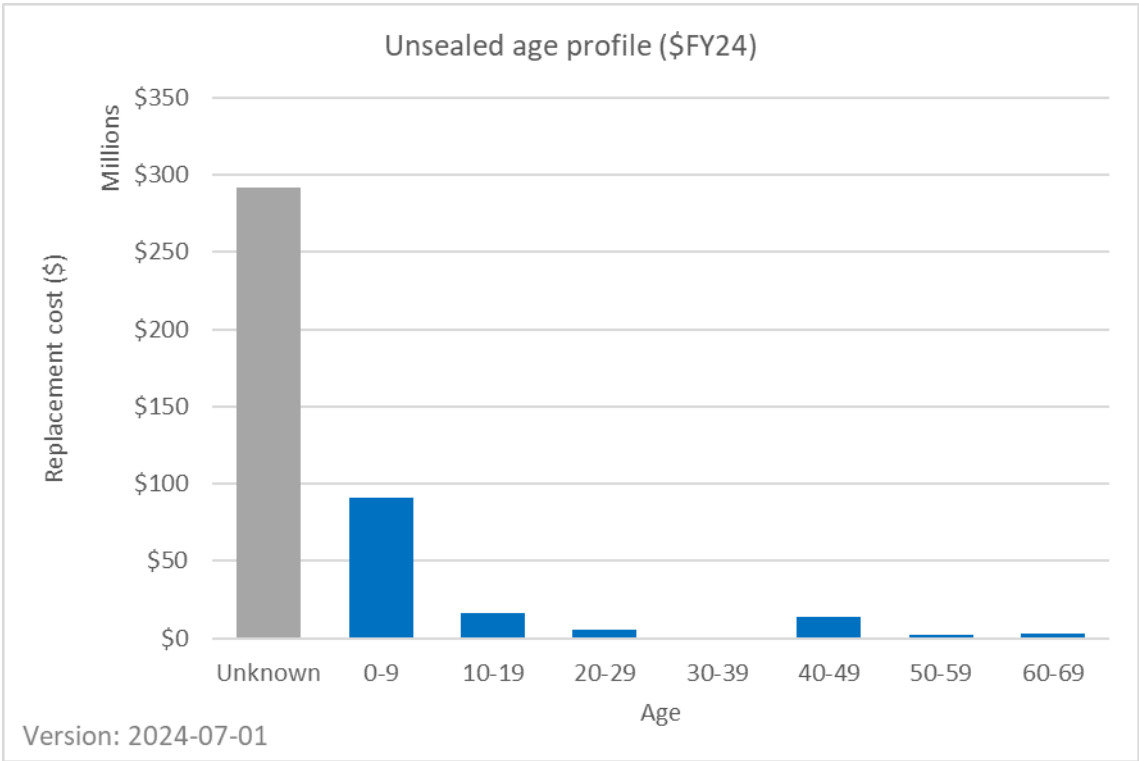


Figure 12: Unsealed Pavements age profile

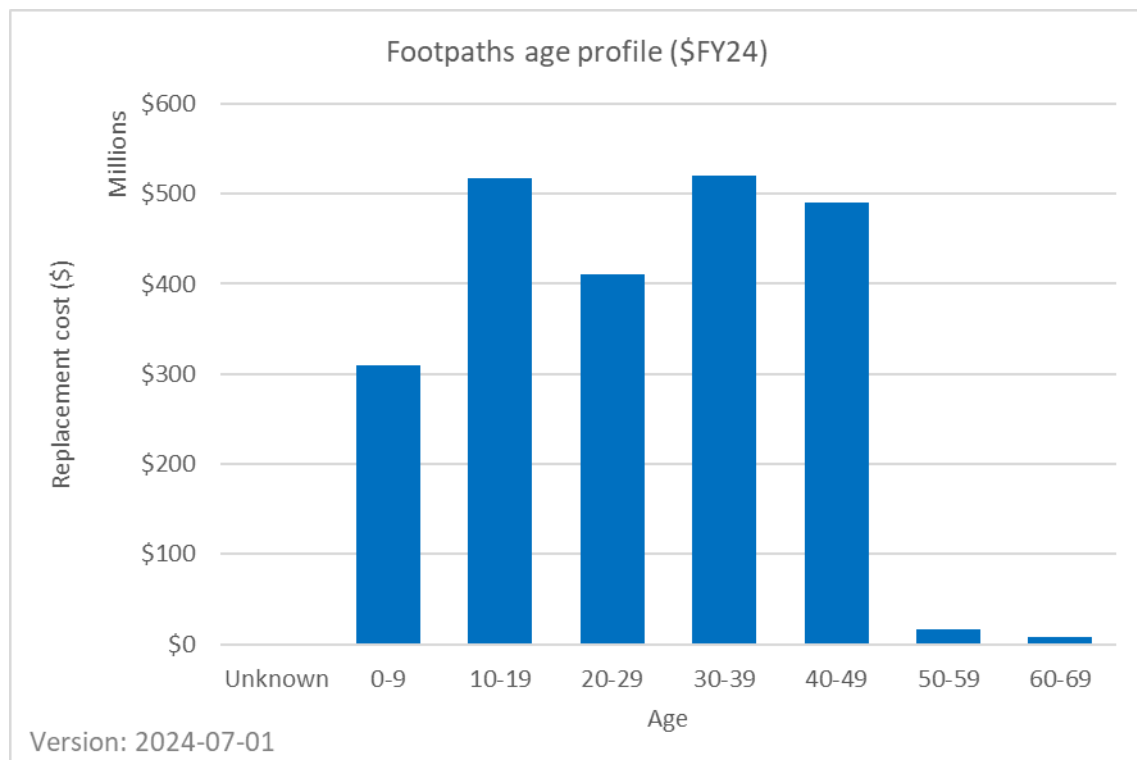


Pathways – footpaths and cycleways

The acquisition of footpath infrastructure has been consistent over the last 50 years, with a roughly equal value of infrastructure being added each decade, between 14% to 22% per decade.

The expected lives of footpath infrastructure are split by the construction material, with concrete footpaths expected to last approximately 50 years and other footpath surfacing expected to last 25-30 years. On the non-concrete footpath infrastructure approximately 54% has exceeded its expected life. For concrete footpath infrastructure, approximately 89% on the total infrastructure, only 1.1% has reached its expected life, and a further 22% in its final decade.

Figure 13: Footpath age profile

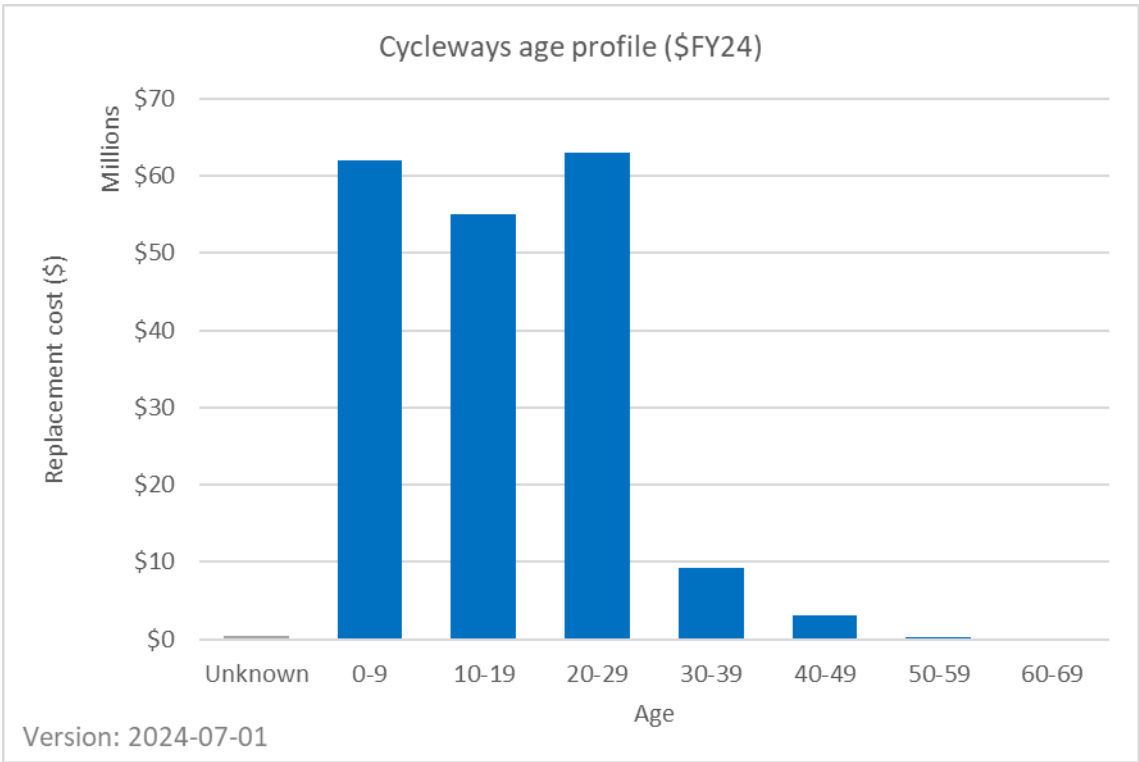


The acquisition of cycleway infrastructure has been consistent over the last 30 years, with a roughly equal value of infrastructure being added each decade, between 28% to 33% per decade.

The expected lives of cycleway bases is 50 years, with approximately 99% of all cycleways being built in the last 50 years. Only approximately 2% of cycleway infrastructure is due to reach its expected life in the next decade.

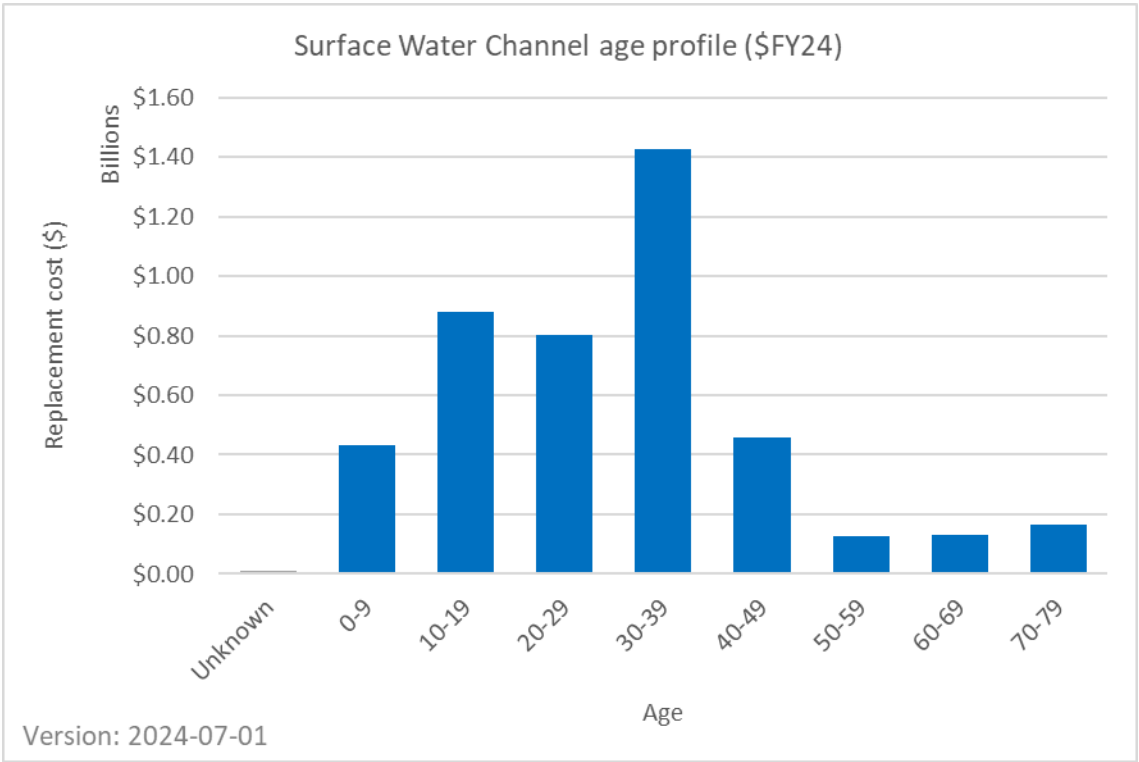
Cycleway surfacing infrastructure are split by the construction material, with concrete cycleways expected to last approximately 50 years and other sealed cycleway surfacing expected to last 25-30 years. Unsealed cycleways are expected to last 10 years. On the unsealed cycleway infrastructure approximately 87% has exceeded its expected life by more than a decade. For concrete cycleway infrastructure, approximately 79% on the total infrastructure, only 0.2% has reached its expected life, and a further 0.7% in its final decade. For the remaining cycleway infrastructure, approximately 22% of has exceeded its expected life, with a further 32% potentially in its final decade.

Figure 14: Cycleways age profile



Stormwater

Figure 15: Surface Water Channel age profile



The age of our surface water channel infrastructure is robust with less than 0.5% of assets not having a construction date. Looking at the data above a third of AT’s surface water channel infrastructure

was constructed 30 to 40 years ago. 47% of the infrastructure is less than 30 years old and the remaining 20% is older than 40 years old.

The expected life of kerb and channel assets are 80 years; however, earth channels only have an expected life of 5 years. Currently, none of AT’s kerb and channel infrastructure has exceeded its expected life and only 11% of the infrastructure is going to exceed is expected life in the next 30 years. However, 98% of all earth channel infrastructure has exceeded is expected life of 5 years.

Minor culverts are all culverts that or minor culverts that do not have a total waterway area greater than 3.4m² as outlined in the Bridge Manual. Minor culvert data is collected from two sources, minor culverts in the urban environment come from Healthy Waters and minor culverts in the rural environment come from AT’s own RAMM data. The age of our minor culvert infrastructure is not robust with 75% of all assets not having a construction date, with the majority of those found in the rural environment. Looking at the data 76% of AT’s minor culvert infrastructure, with a known age, was constructed in the last 40 years ago. Most minor culvert infrastructure have been added in the last 70 years with approximately 10% to 20% of assets being added each decade.

The expected life of the culvert infrastructure is 80 years. Currently, 1% of AT’s culvert infrastructure has exceeded its expected life and a further 18% of the infrastructure is going to exceed is expected life in the next 30 years.

Figure 16: Minor Culverts age profile

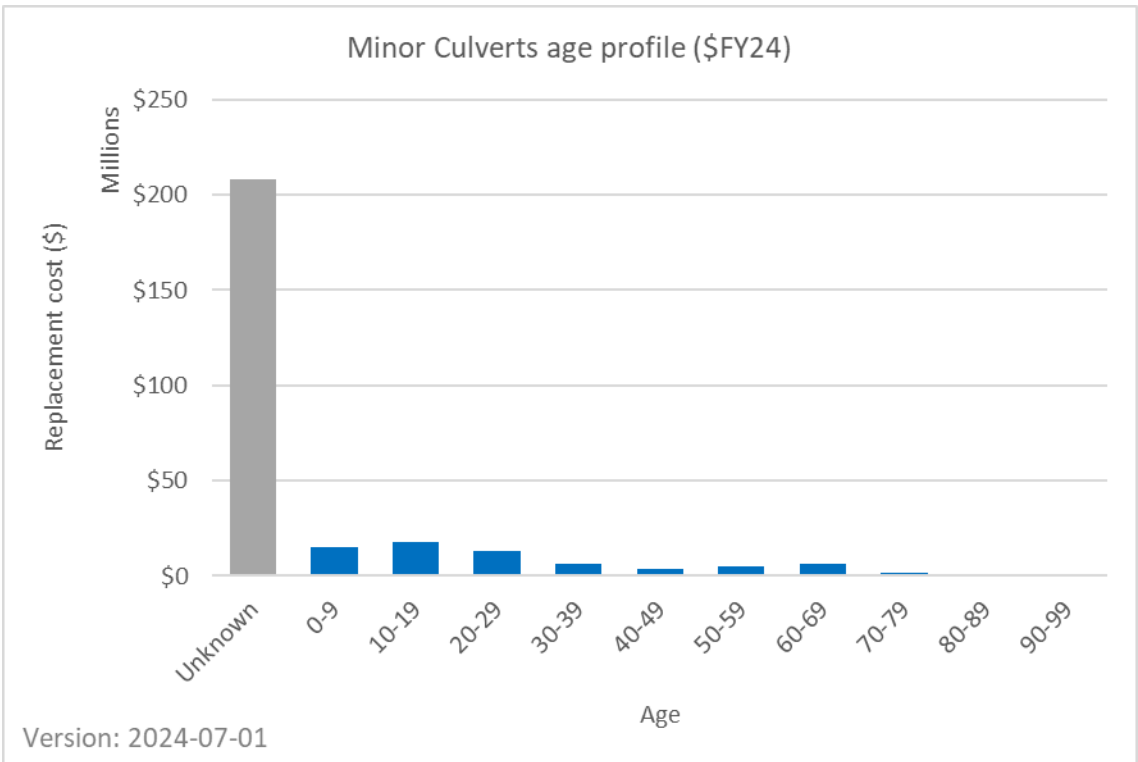
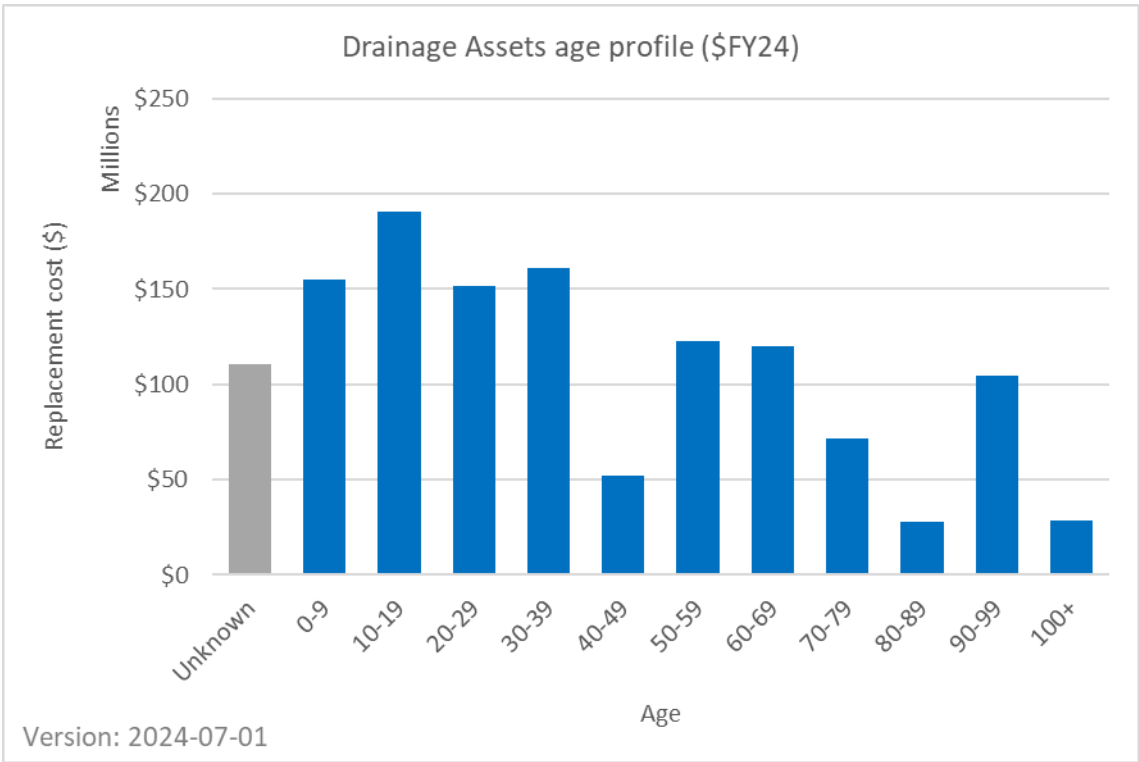


Figure 17: Drainage Assets age profile



The age of our drainage infrastructure, which contains catchpits, soakholes and manholes is good with only 9% of assets not having a known construction date. Looking at the data above a half of AT’s drainage infrastructure was constructed 30 to 40 years ago. The installation of new drainage infrastructure has been consistent over the last 80% with approximately 10% to 15% being added each decade except for 40 to 50 years ago when only 4% of the assets were added.

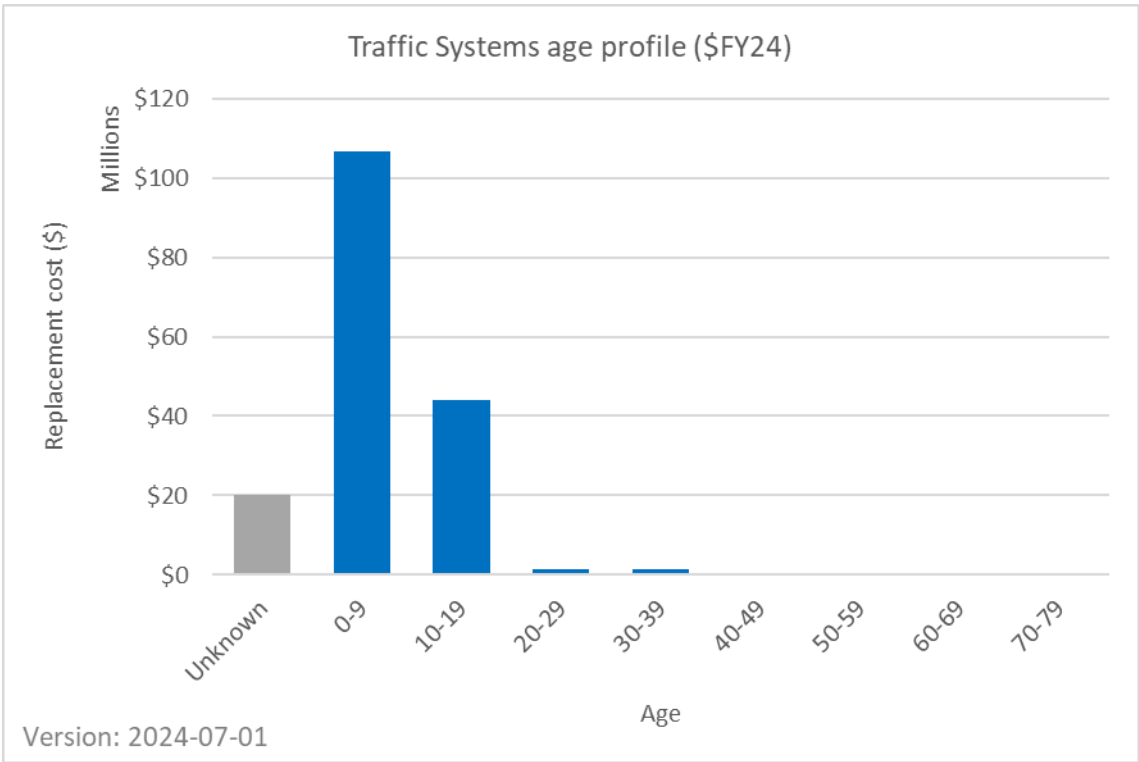
The expected life of drainage assets are 80 years. Currently, 14% of all drainage infrastructure have exceeded its expected life and a further 26% of the infrastructure is going to exceed its expected life in the next 30 years.

Traffic signals

The traffic signal infrastructure includes CCTV cameras, Call boxers, Controllers, Logic Racks, Lanterns Tactile Boards and traffic signal Poles.

The age of our traffic signal infrastructure is good with only 11% of assets not having a construction date. Most of the ‘Unknown’ age data is currently in the CCTV assets with 27% of assets not having an install date. Looking at the data 95% of AT’s Traffic Signals infrastructure was constructed in the last 20 years. 60% of the infrastructure is less than 10 years old and the remaining 28% is older than 10 years old.

Figure 18 Traffic Systems age profile



The expected life of traffic signals infrastructure is dependent on the asset type. CCTV cameras are expected to last 6 years, with 24% of the CCTV assets having already exceeded its expected life. It is expected that CCTV cameras will be renewed between 5 and 6 times during the next 30 years.

Logic Racks, Tactile Boards and Call Boxes have an expected life of 10 years. Currently, 38% of these traffic signals assets have already exceed its expected life of 10 years. It is expected that these assets will be replaced 2 to 3 times in the next 30 years.

Controllers and lanterns have an expected life of 15 years. Currently, only 10% of these traffic signals assets have already exceed its expected life of 30 years. It is expected that these assets will be replaced 1 to 2 times in the next 30 years.

Poles have an expected life of 30 years. Currently, only 10% of these traffic signals assets have already exceed its expected life of 15 years. It is expected that these assets will be replaced at least once in the next 30 years.

Streetlights

The streetlight infrastructure includes streetlight poles, brackets, streetlight controls and lights.

The age of our streetlight infrastructure is moderate with only 26% of assets not having an installation date. Most of the 'Unknown' age data is currently in the pole and bracket assets with 30% and 35% respectively of these assets not having an install date.

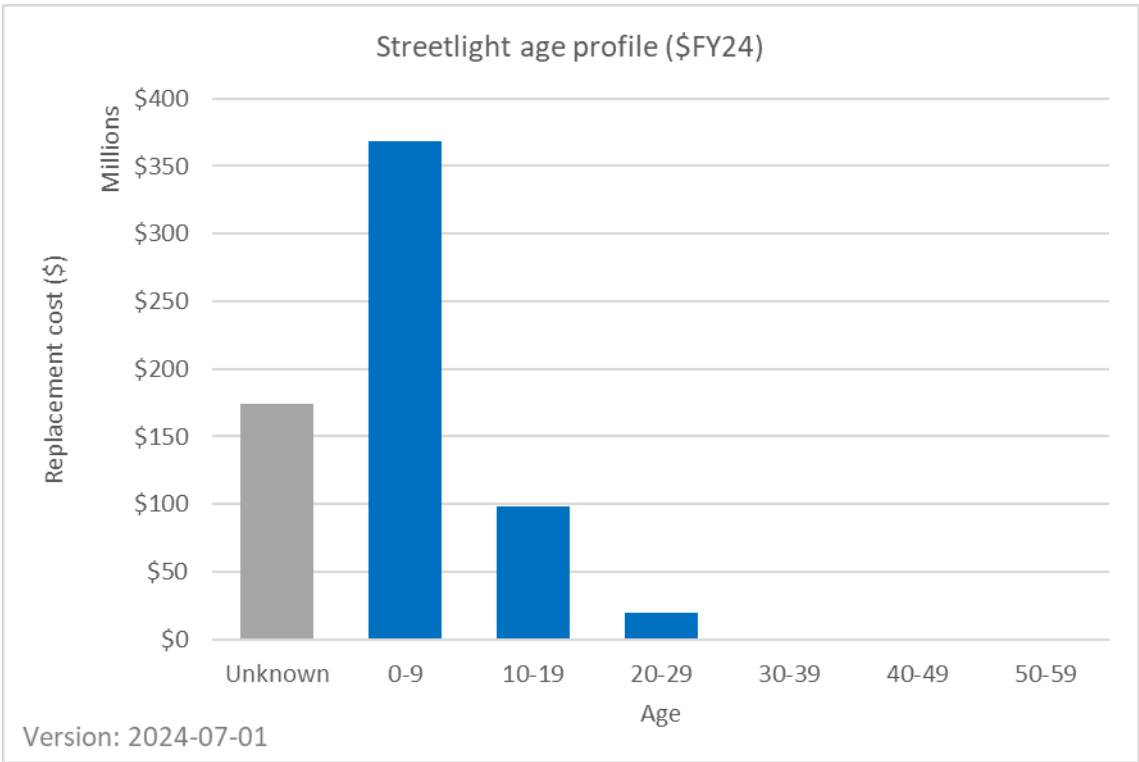
Looking at the data, 96% of AT's streetlight infrastructure, with a known installation date, was constructed in the last 20 years. 76% of the infrastructure is less than 10 years old and the remaining 24% is older than 10 years old.

The expected life of streetlight infrastructure is dependent on the asset type. Brackets, controllers, and lights are expected to last 25 years. Poles are expected to last 30 years except for concrete poles that are expected to last 40 years.

Currently 99% of all brackets, controllers, and lights, with a known installation date, have not reached their expected life. It is expected that all these assets will need to be replaced at least once during the next 30 years.

100% of all poles, with a known installation date, have not reached their expected life. It is expected that all these assets will need to be replaced once during the next 30 years.

Figure: 19 Streetlight age profile



Road furniture and signage

The road furniture and signage infrastructure include traffic island, railings, bollards, cycle parking, signs & sign posts and ITS signs.

The age of our road furniture and signage infrastructure is poor with only 46% of assets not having a installation date. Most of the ‘Unknown’ age data is currently in the cycle parking, ITS Signs, Railings and Bollards with 74%, 63%, 66% and 52% respectively of these assets not having an install date.

Looking at the data, 92% of AT’s road furniture and signage infrastructure, with a known installation date, was constructed in the last 20 years. 38% of the infrastructure is less than 10 years old and the remaining 62% is older than 10 years old.

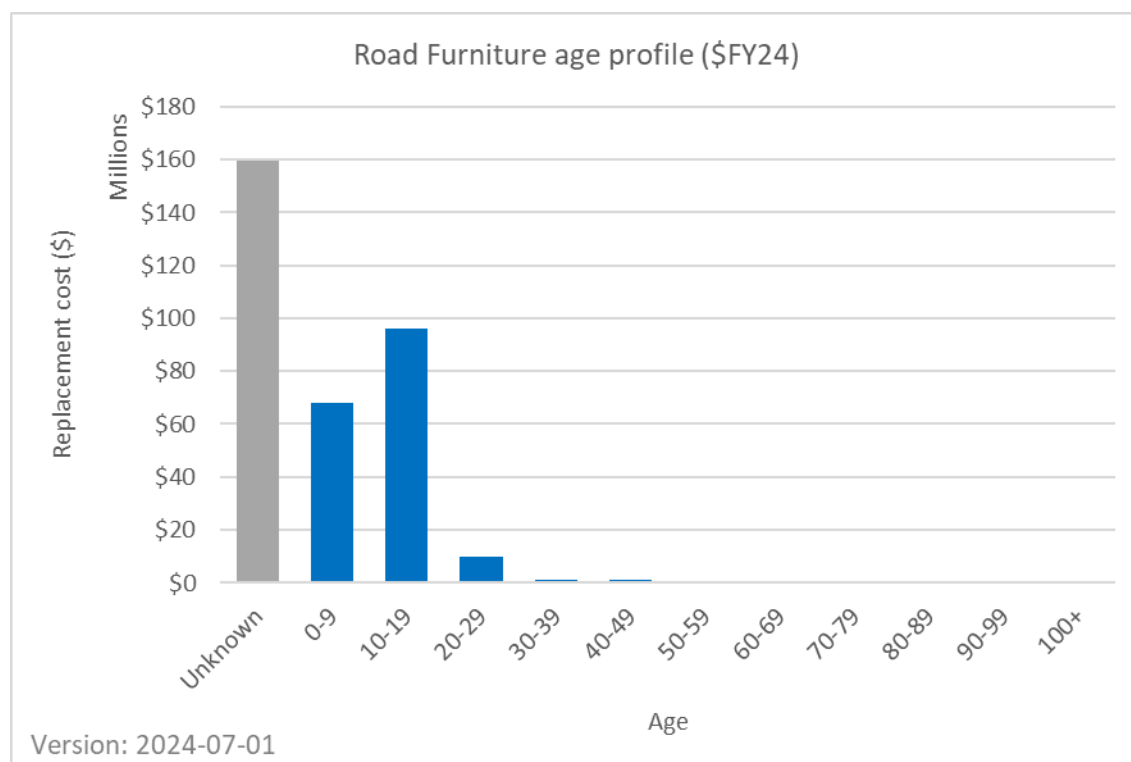
The expected life of road furniture and signage infrastructure is dependent on the asset type. Signs and ITS signs have an expected life of 15 years expect for variable message signs that have an expected life of 10 years. Currently 60% of all signs have yet to reach their expected lives with 40% having exceeded their expected lives. Currently, all ITS signs, with a known condition, have not

exceeded their expected lives. 99% of all signposts have not exceeded their expected lives of 30 lives.

The expected life of bollard assets is 25 years, of which 96% of assets have not exceeded their expected lives. Similarly, railings have an expected life of 25 years, of which 85% have not exceeded their expected lives. Additionally, cycling parking assets have an expected life of 25 years. Currently, all cycling parking assets have an age less than 20 years old.

The expected lives of traffic island assets are 75 years, of which all currently known traffic island infrastructure is less than 40 years old. All traffic islands assets with a known island date should not reach their expected life in the next 30 years.

Figure: 20 Road Furniture and Signage age profile



Asset condition profiles

The condition of Auckland Transport's infrastructure is regularly monitored and checked. The measurement of condition is done using the 1 to 5 grading system as defined by the International Infrastructure Management Manual (IIMM). In using this best practice system Auckland Transport can:

- Monitor the integrity of its infrastructure, to ensure asset can support the delivery of Auckland Transport's services
- Model and forecast Renewal (CAPEX) Investment Needs.
- Use this consistent approach in the support of Auckland Transport's long-term asset management decision-making.

The IIMM condition rating system is described as follows:

Table 8: Condition ratings

Condition grade	Description
Very Good [1]	In very good condition
Good [2]	Minor defects only
Moderate [3]	Maintenance required
Poor [4]	Consider renewal
Very Poor [5]	Approaching unserviceable

Carriageway (pavement)

Condition is currently collected every two years using a combination of high-speed data and visual inspections by consultants. This methodology will be changing in the first three years of this plan as NZ Transport Agency Waka Kotahi (NZTA) carry out data collection on all the roads in New Zealand under the Common Condition Data Collection (CCDC) project.

Most pavement bases are currently in acceptable condition, being of moderate condition or better (94%). Only 3% of pavement bases are currently in unacceptable condition with a further 3% in unknown condition. At our current funded level of service, AT is renewing pavement bases at 0.1% of network per annum. Pavement bases are depreciating at a rate of 1.3% of the network per annum. Given the current state of assets, the agreed depreciation rates and the funded renewals rate, it is very likely that the condition of pavement assets will continue to deteriorate in the next 30 years. The condition data of pavement bases is deemed to be reliable as it 98.5% of the condition data has been inspection in the last 3 years.

Figure 21: Pavement Base condition profile

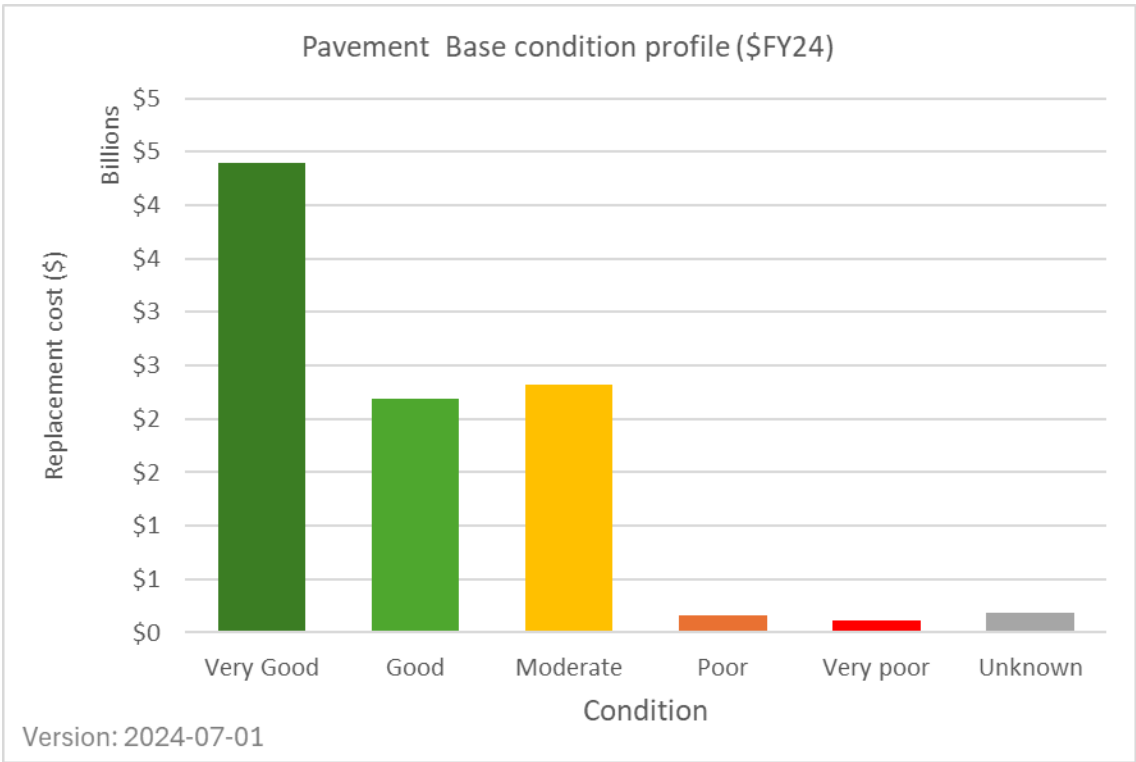
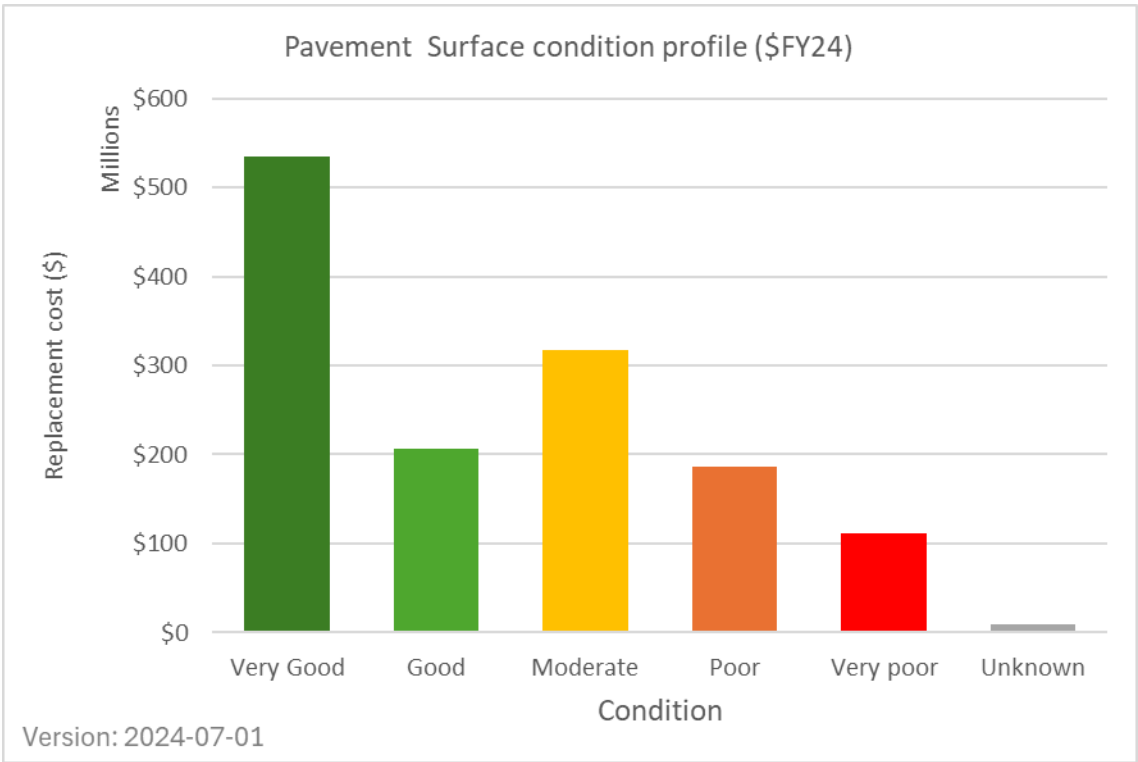


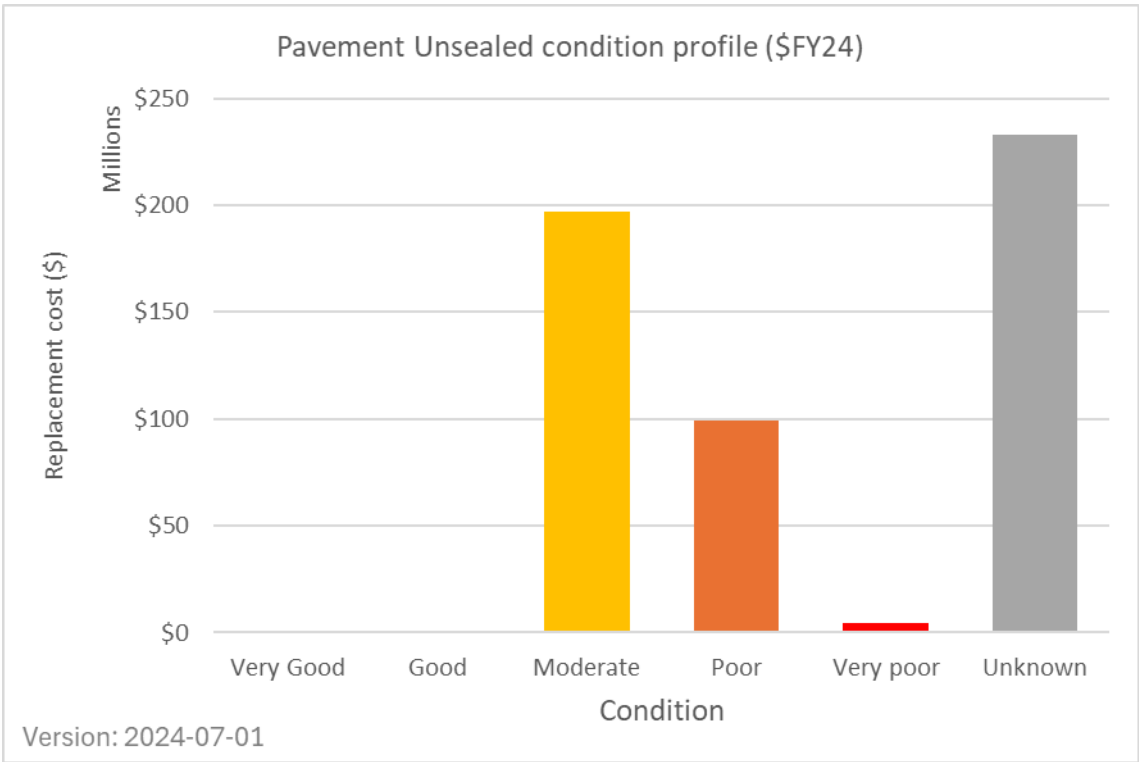
Figure 22: Pavement Surface condition profile



79% of pavement surfacing are currently in acceptable condition, being of moderate condition or better. 20% of pavement bases are currently in unacceptable condition with a further 1% in unknown condition. At our current funded level of service, we are renewal pavement surfacing at 5.5% of network per annum. Pavement surfaces are depreciating at a rate of 6.66% of the network per annum. Given the current state of assets, the agreed depreciation rates and the funded renewals rate, it is very likely that the condition of pavement assets will continue to deteriorate in the next 30 years. The planned budget for surfacing renewals at 8% should help to address the increase in unacceptable pavement surfacing, however, it needs a funding commitment for at least the next 10 years. The condition data of pavement surfaces are deemed to be reliable as it 97.6% of the condition data has been inspection in the last 3 years.

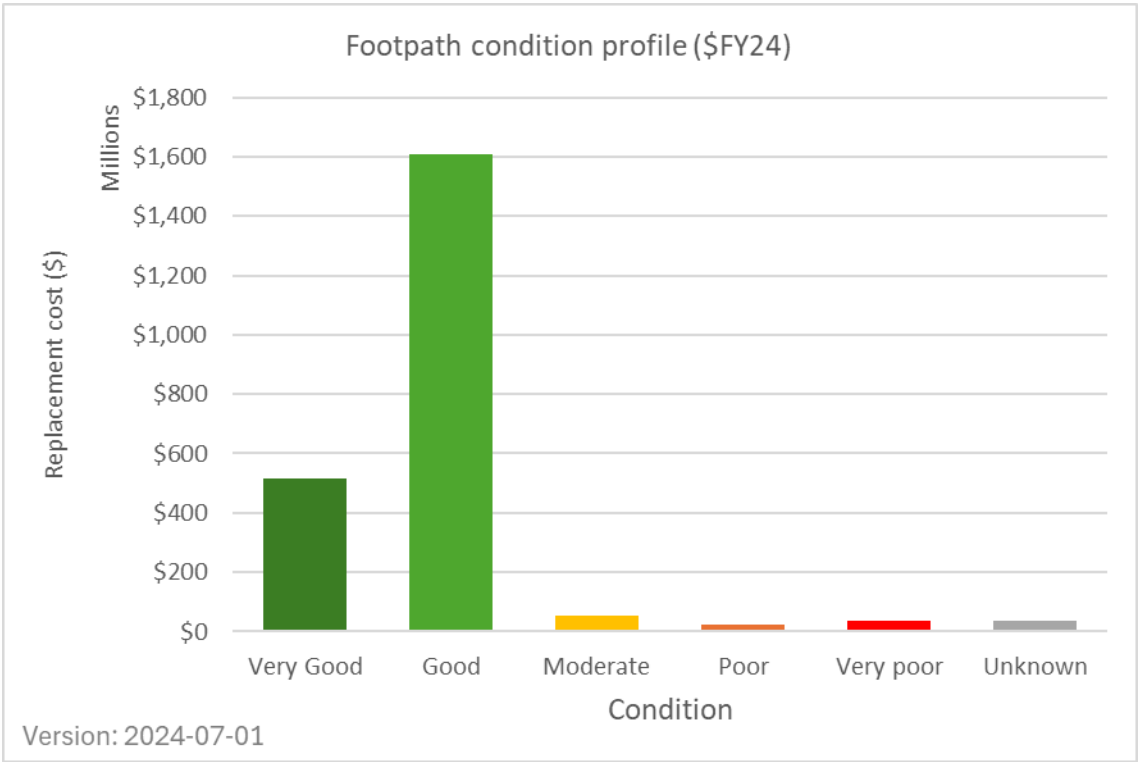
The condition of unsealed pavements is quite immature, with 44% of pavements in unknown condition. 37% of unsealed roads are in acceptable condition, being moderate. The remaining 19% of unsealed pavements are currently in unacceptable condition. The depreciation rate of unsealed roads is 1.15% per year. Condition assessment on unsealed roads should be invested in the next NLTP period to bring the percentage of unknown assets down. Additionally, significant investment will be required to ensure the unsealed pavements are in acceptable condition. The condition data of unsealed pavements are deemed to be not reliable to base investment from a condition profile as it 52% of the condition data has been inspection in the last 3 years.

Figure 23: Unsealed Pavement condition profile



Pathways – footpaths and cycleways
Condition is currently monitored on a two-year cycle, where consultants collect data using AI camera technology.

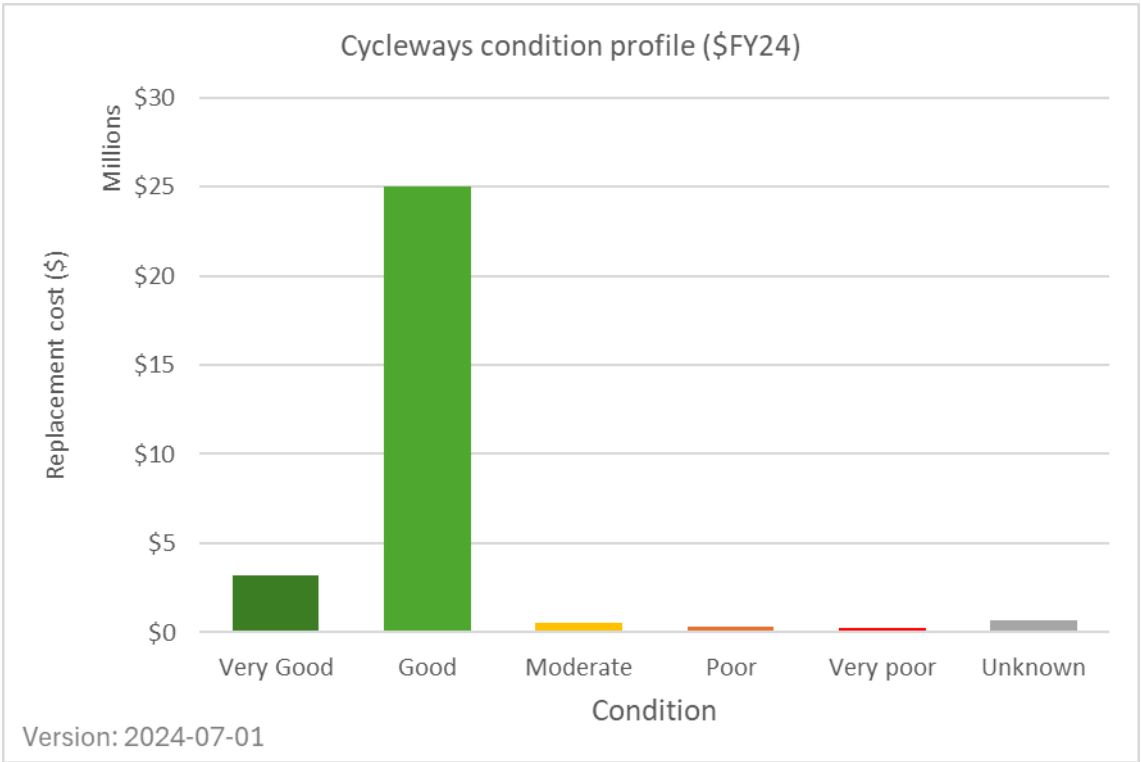
Figure 24: Footpath condition profile



Footpath infrastructure is currently in acceptable condition, with 96% of all infrastructure in moderate condition on better. 54% of the non-concrete footpath infrastructure has exceeded its expected life, however, 93% of the same assets are in moderate condition or better. Similarly, 96% of all concrete footpaths are in moderate condition or better. This would indicate that the current maintenance and renewals strategy appears to be working for the infrastructure and continued investment in the infrastructure should maintain the current level of service.

The reliability of the footpath condition data has been determined to be very high, with 95% of footpath infrastructure being inspected in the last 3 years and only 4% of footpath infrastructure with a known condition having an unknown condition date.

Figure 25: Cycleways condition profile



Cycleway infrastructure is currently in acceptable condition, with 95% of all infrastructure in moderate condition on better. 87% of the unsealed cycleway infrastructure has exceeded its expected life, however, 99% of the same assets are in good condition or better. Similarly, 94% of all concrete cycleways and 94% of non-concrete cycleways are in good condition or better. This would indicate that the current maintenance and renewals strategy appears to be working for the infrastructure and continued investment in the infrastructure should maintain the current level of service.

The reliability of the cycleway condition data has been determined to be medium-high, with 80% of cycleway infrastructure being inspected in the last 3 years. However, 11% of cycleway infrastructure with a known condition have an unknown condition date.

Stormwater

Surface water channel condition data is monitor on a two-yearly cycle and is collected when carriageway data is collected.

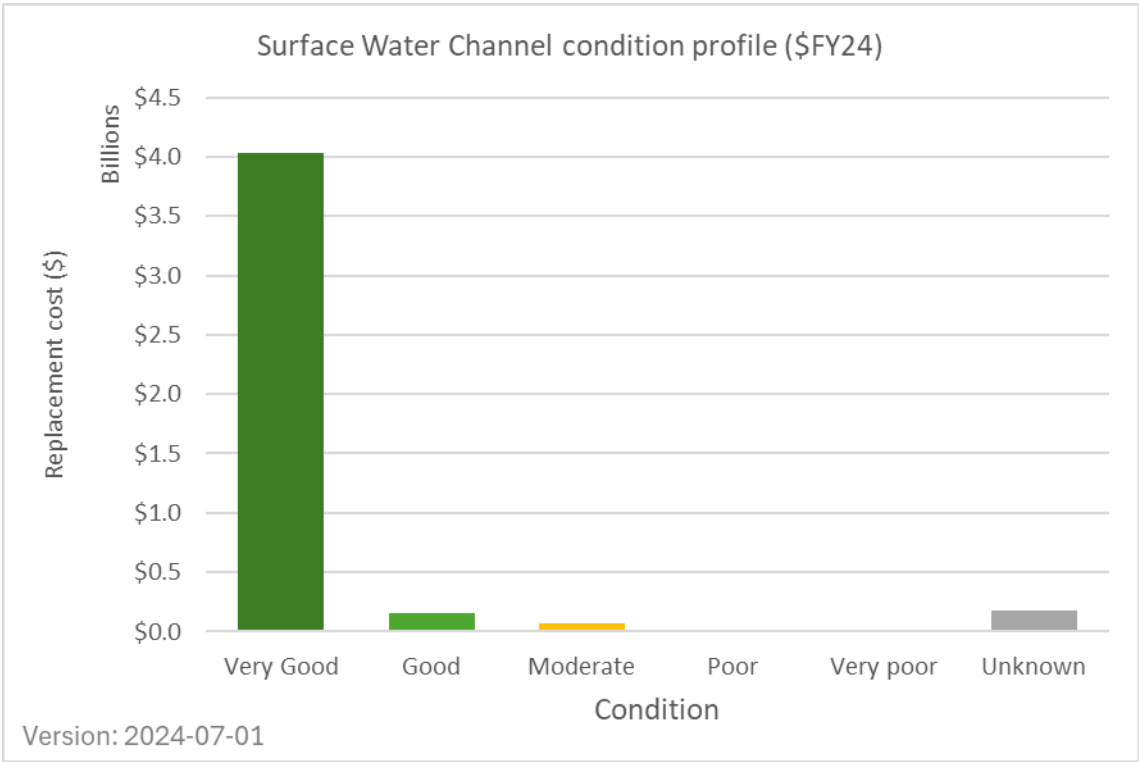
Urban drainage and stormwater condition data is collected by Healthy Waters. A high-level condition inspection is carried out when the infrastructure is being cleaned. More detailed inspections are carried out periodical based on Healthy Waters criticality rating.

Rural drainage and stormwater condition should be collected when contractors clean the rural infrastructure. This is not currently being recorded.

Surface Water Channel infrastructure is currently in acceptable condition, with 96% of all infrastructure in moderate condition on better. 100% of the surface water channel infrastructure has yet to reach its expected life. This would indicate that the current maintenance and renewals strategy appears to be working for the infrastructure and continued investment in the infrastructure should maintain the current level of service.

The reliability of the surface water channel infrastructure condition data has been determined to be very high, with 95% of infrastructure being inspected in the last 3 years and only 4% of surface water channel infrastructure with a known condition having an unknown condition date.

Figure 26: Surface Water Channel condition profile



The condition of minor culvert infrastructure is principally based on the age of the asset, where if the culvert is less than or equal to 20 years old it is considered to be Very Good, if the culvert is less than or equal to 40 years old it is considered to be Good and if the culvert age is less than or equal to 55 years old it is considered to be Moderate. All other assets are unknown unless condition data is available.

Given the data available from Health Waters for Urban assets and Auckland Transport for Rural assets 59% of all minor culvert infrastructure is currently in acceptable condition. However, 37% of all culvert infrastructure is in unknown condition. Based on the high level of unknown condition of culvert infrastructure and the high level of unknown culvert age, the culvert investment needs will be based on historical renewals spend.

Figure 27: Minor Culverts condition profile

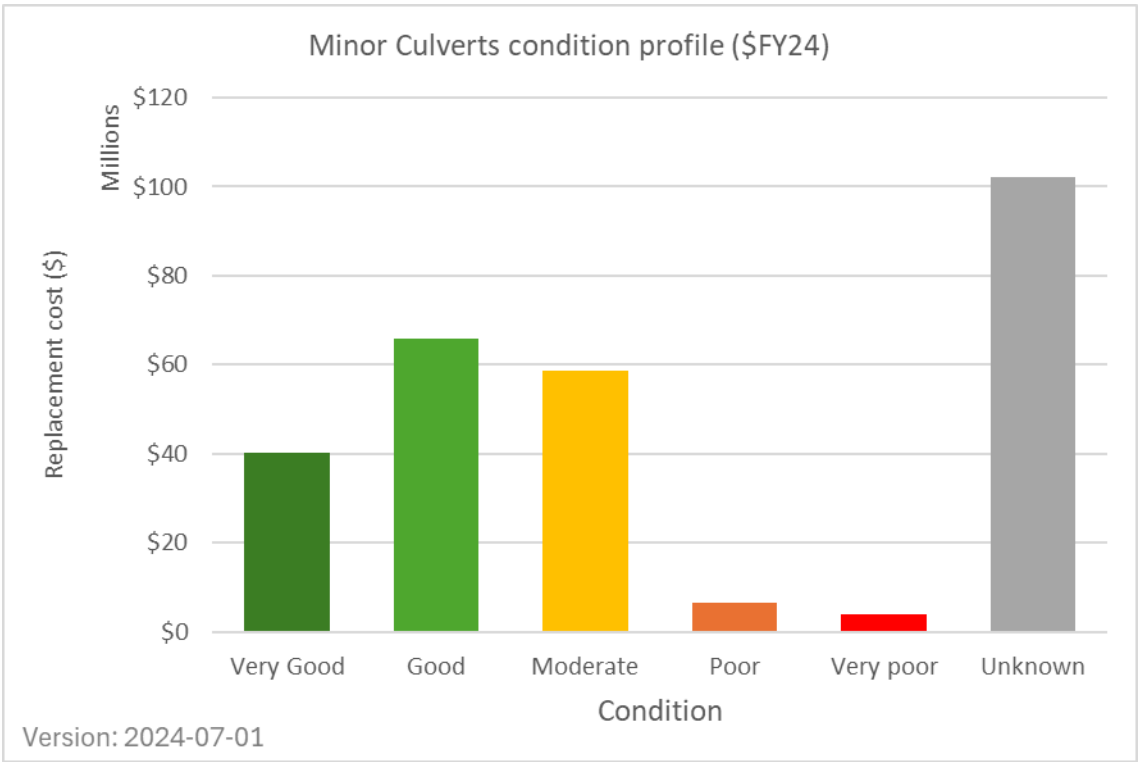
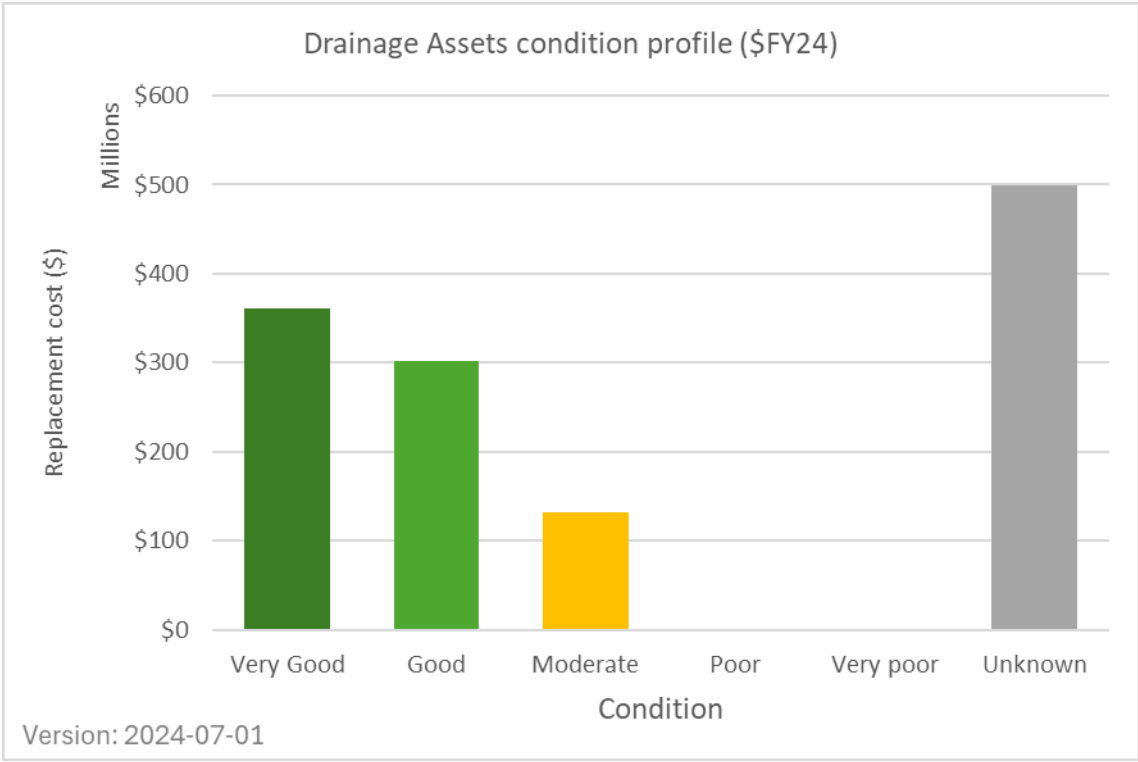


Figure 28: Drainage Assets condition profile



The condition of soak holes, manholes and catchpit infrastructure is principally based on the age of the asset, where if the asset is less than or equal to 20 years old it is considered to be Very Good, if the asset is less than or equal to 40 years old it is considered to be Good and if the asset age is less

than or equal to 55 years old it is considered to be Moderate. All other assets are unknown unless condition data is available.

Given the data available from Health Waters for Urban assets and Auckland Transport for Rural assets 61% of all drainage infrastructure is currently in acceptable condition. However, 39% of all drainage infrastructure is in unknown condition. Based on the high level of unknown condition of drainage infrastructure and the high level of unknown drainage age, the culvert investment needs will be based on historical renewals spend.

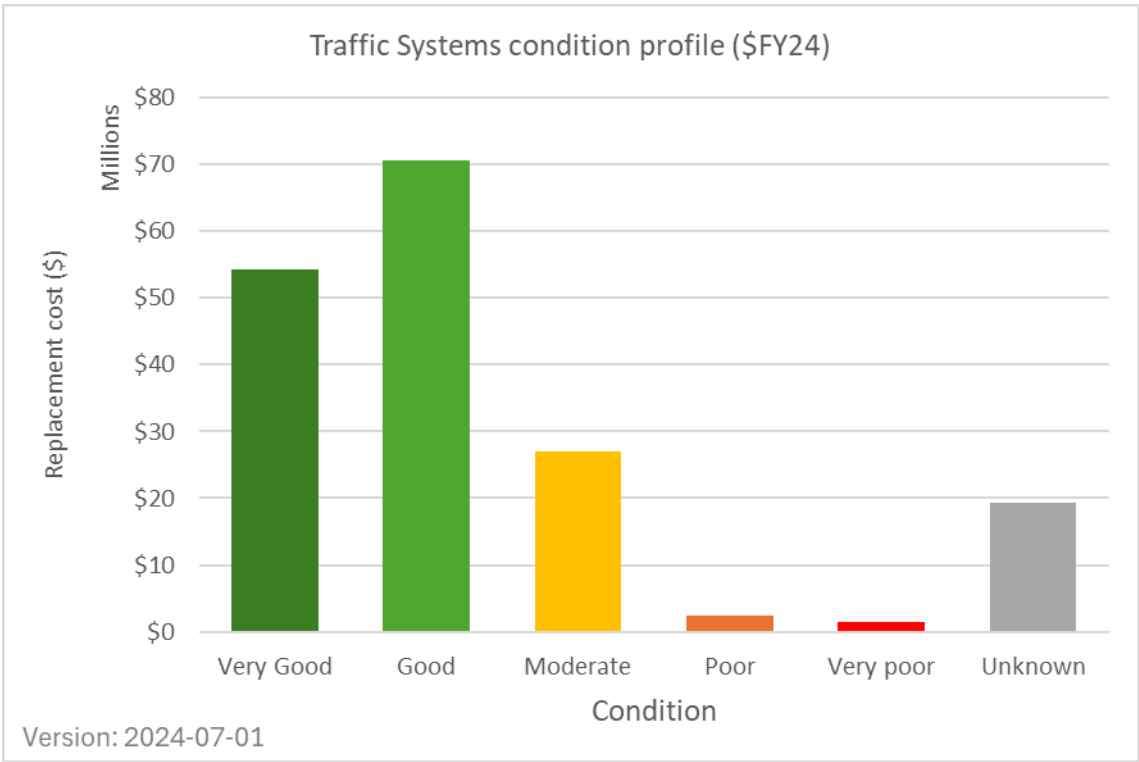
Traffic systems

Condition is not currently monitored due to budget constraint. Maintenance inspections are being carried out yearly by contractors.

The condition data presents as looking good with 87% of the infrastructure in acceptable condition and only 11% of all infrastructure in unknown condition. The biggest contributor to the unknown condition is the CCTV assets which have 26% of assets in unknown condition.

However, the condition data is not robust with 14% of all assets with a known condition date do not have a condition date and only 26% of all known condition grades have been recorded in the last 3 years. For all traffic signals assets, except for CCTV cameras, 40% to 50% of asset conditions are 6 years or older. The traffic signal data will be modelled using an age-based model as the condition data is out of date.

Figure 29: Traffic Systems condition profile



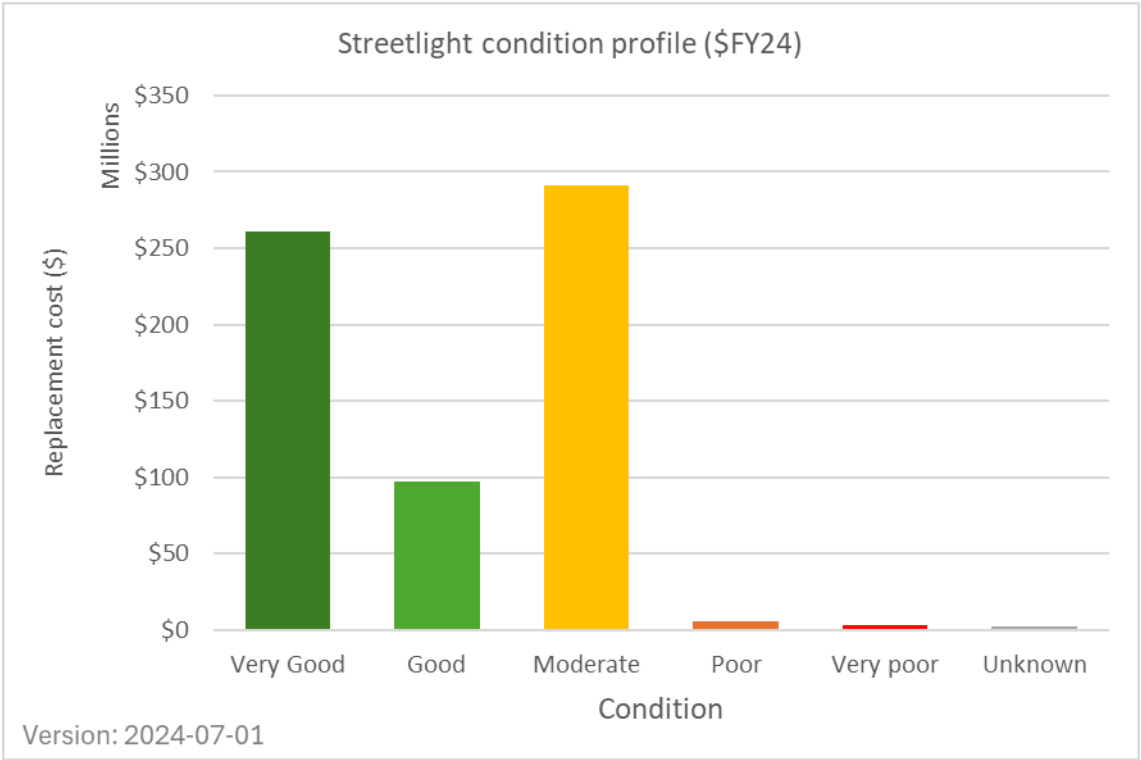
Streetlights

Condition is not currently monitored due to budget constraint. Maintenance inspections are being carried out yearly by contractors.

The condition data presents as looking good with 98% of the infrastructure vested to Auckland Transport in acceptable condition and less than 1% of all infrastructure in unknown condition.

However, the condition data is not robust with 43% of all known condition grades having been recorded in the last 3 years. For all streetlight assets, 20% to 30% of asset conditions are 6 years or older. The streetlight investment needs will be modelled using an historical investment model as the more than half of the condition data is out of date and 26% of streetlight assets don't have a known installation date.

Figure 30: Streetlight condition profile



Road furniture and signage

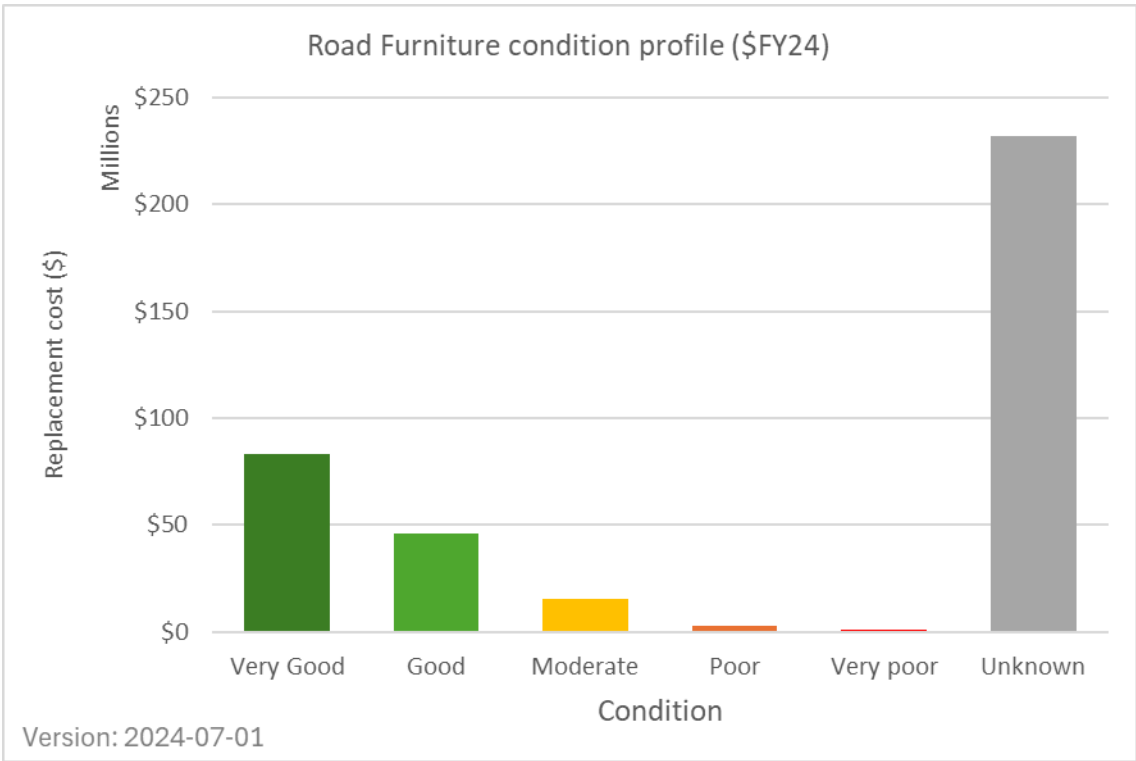
Condition is not currently monitored due to budget constraint. Maintenance inspections are being carried out yearly by contractors.

The condition data presents as looking very poor with 38% of the road furniture and signage infrastructure vested to Auckland Transport in acceptable condition and less than 61% of all infrastructure in unknown condition. Bollards, Rallings and Traffic Islands have the biggest proportion of assets in unknown condition with 75%, 81% and 61% in unknown condition.

Additionally, the condition data is not robust with 74% of all known conditions grade not having an associated condition date. The road furniture and signage infrastructure investment needs will be modelled using an historical investment model as the 74% of the condition grade not having an associated condition date and 38% of the known condition grades with a condition date not

inspected in the last 3 years. Additionally, 46% of road furniture and signage infrastructure without a known installation date.

Figure 31: Road Furniture and Signage condition profile



Key Asset Class Deficiencies

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known and detailed as followed.

Table 9: Key Transport Networks deficiencies

Asset Class	Key deficiency
Streetlights	- According to the Pole Renewals report by Babbage, the condition inspections of ATs poles were put on hold in 2014 as AT did not have sufficient budget or contractor resource to replace poles. This is echoed in the 10 Year FWP by WSP, where 75% of Poles, 82% of lights and 83% of brackets do not have a condition rating in the last 2 years. - Until budget and contractor resource can be realised to conduct condition inspections, using a 2-year condition cycle, the streetlight condition is not considered reliable.
Traffic Systems	- Currently, AT do not have the resource to do a full cycle of condition rating. Contractors only record pass/fail ratings for traffic signal components during Preventative Maintenance inspections and complete urgent maintenance. - Until a new team can be established to conduct condition inspections, using a 3-year condition cycle, the traffic systems condition is not considered reliable

Road furniture and signage	• Currently, AT do not have the resource to do a full cycle of condition rating for road furniture and signage assets with a significant proportion of assets in unknown condition, without a condition date or condition ratings older than 2 years. • Until a new team can be established to conduct condition inspections, using a 2-year condition cycle, the road furniture and signage condition is not considered reliable
Drainage assets	• ATs urban drainage data sits on an external asset database that it does not have direct access to. This has led to a double up of information where both systems may not have all known assets. Additionally, there is no common ID across both systems. • This makes it difficult to understand and monitor the condition of ATs vested assets.
Pavements	• Since 2018/19, AT has been on a Renewal (CAPEX) “holiday” by NZTA Waka Kotahi due to constraints on budget. AT was achieving an average resealing rate of 5.7% and a rehabilitation rate of 0.1% during this 6-year period. • The recommended resealing rate for local government is 8% per annum. The average pavement base life is 75 years used in the financial depreciation models which would suggest a renewals rate of 1.3%. • As AT have not been achieving this renewal rates for at least the last 6 years, there will be a significant number of deferred renewals that will need to be address. It is unlikely that resource will be made available to address the deferred renewals.

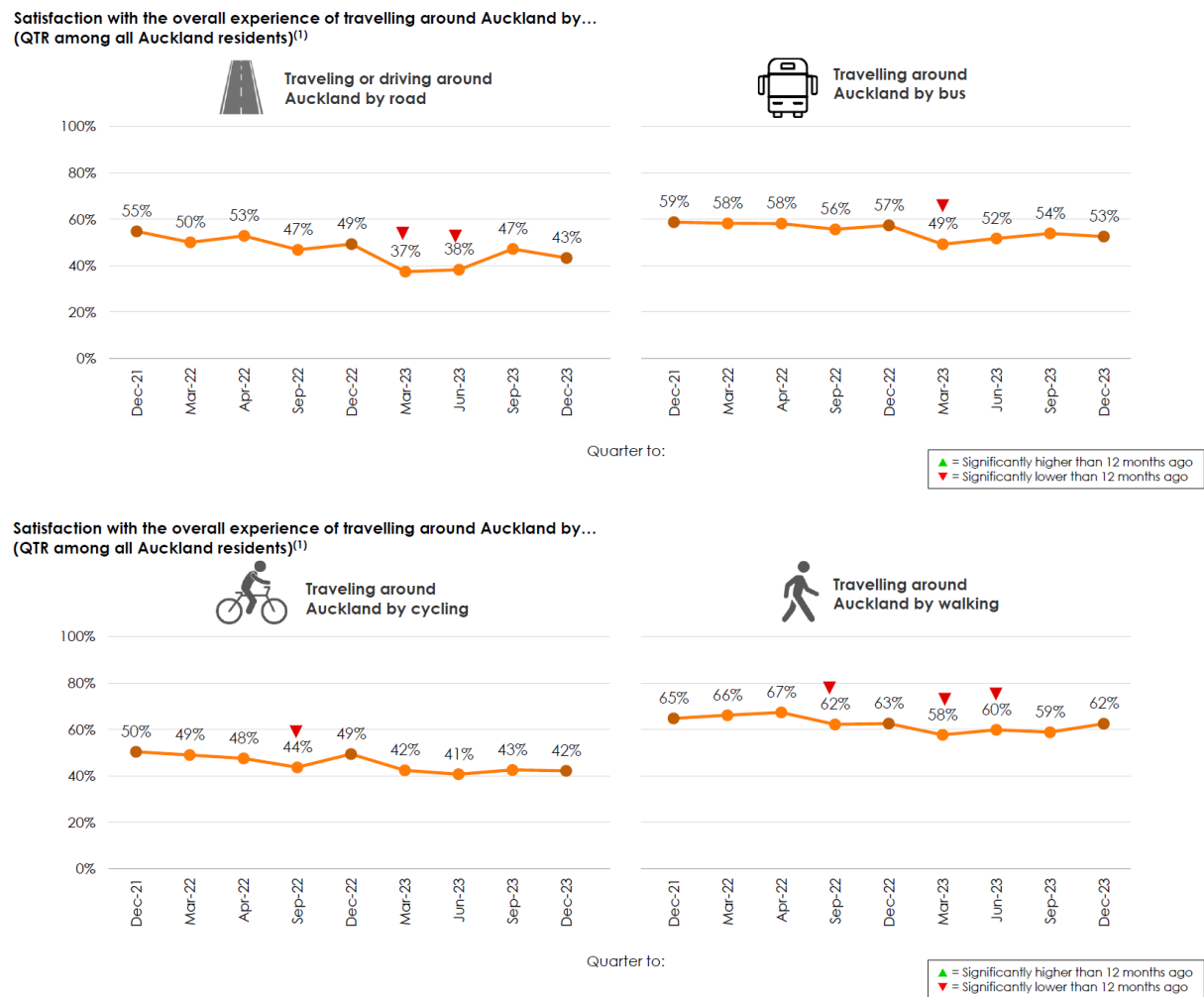
Levels of Service

Customer Surveys and Feedback

Auckland Transport gathers customer feedback quarterly, on its transport.

For the transport network this consists of an on-line survey of 2000 Aucklanders a year (500 per quarter), with representative samples in terms of age, gender, ethnicity, and area (ward). Satisfaction measures encompass region wide and at a local level, and individual arterial routes. The following presenting a high-level snapshot of results from December 2023 surveys.

Figure 32: Current customer feedback on transport networks



Strategic and Corporate Goals

This plan is prepared under the direction of Auckland Transport current purpose, vision, and mission, as follows:

- Purpose: Easy Journeys, Connecting people and communities.
- Vision: An Auckland that is Accessible, Well-connected, Safe, and Sustainable.
- Missions:
 - Accessible: Less congested transport network, with faster and more predictable travel times.
 - Well-connected: Easier access for people to places of employment, education, shopping, business, recreation, and other activities through the transport network.
 - Safe: Fewer deaths and serious injuries on the transport network.
 - Sustainable: More environmentally friendly transport network with reduced greenhouse gas emissions.

Strategic goals have been set by Auckland Transport. The relevant goals and objectives and how these are addressed in this plan are summarised in the table below.

Funding the management of Auckland Transport’s assets is done in collaboration with the Auckland Council and Waka Kotahi, in consultation with the Auckland’s rate payers and transport network users.

This document is one of a set of documents that supports how Auckland Transport’s assets will be managed, including:

- [Government Policy Statement on Land Transport](#) (2024 draft)
- [Transport Outcomes Framework](#), developed by the Ministry of Transport
- [Auckland Plan 2050](#), developed by Auckland Council
- [Arataki](#), Waka Kotahi’s long-term strategic plan for the land transport system.
- [One Network Framework](#) (ONF), a tool developed by [Te Ringa Maimoa](#) that is used to classify transport networks in terms of movement and place function.

Two key funding documents that have a direct impact on this document are:

- NZTA’s 10-year [National Land Transport Plan](#) (NLTP); and
- Auckland Transport’s 10-year [Regional Land Transport Plan](#) (RLTP).

Auckland Transport has developed a set of objectives, with input from Auckland Council, NZTA, the Ministry of Transport and KiwiRail, to summarise the agreed strategic direction for Auckland’s transport networks over the coming years. These objectives, as detailed below, guide Auckland Transport’s Regional Land Transport Plan and companion documents.

Table 10: Regional Land Transport Plan objectives

Regional Land Transport Plan objectives	How Asset Management supports this
Safety: Make the transport system safe by eliminating harm to people.	By ensuring assets are kept in good condition through lifecycle maintenance and renewal of assets.

Regional Land Transport Plan objectives	How Asset Management supports this
<u>Travel choices:</u> Accelerate better travel choices for Aucklanders.	Through the programmed and coordinated changes in the form and utilisation of assets.
<u>Access and connectivity:</u> Better connecting people, places, goods, and services.	Through the programmed and coordinated changes in the form and utilization of assets.
<u>Growth:</u> Enabling Auckland's growth through a focus on intensification in brownfield areas, with some managed expansion into emerging greenfield areas.	By ensuring: - Existing assets are kept in good condition through lifecycle maintenance and renewal of assets. - New assets can be maintained and renewed when they become operational.
<u>Climate change and the environment:</u> Improving the resilience and sustainability of the transport system, and significantly reducing the greenhouse emissions it generates.	Through the programmed and coordinated uplift in existing asset resilience. Also, by assessing and reporting the amount of embodied carbon in the programme we can include emissions as part of our evaluation.
<u>Value for money:</u> Ensuring value for money across Auckland's transport system through well-targeted investment choices.	Through best practice asset management – the lifecycle maintenance, operation, and renewal of existing assets – will support ensuring value for money for Auckland Transport's rate payers and customers.

Auckland Council's infrastructure investment direction

The Council Group Asset Management Policy and ISO55001 require that asset management plans are aligned to and consistent with organisational objectives. The Local Government Act 2002 also requires that local government decision-making considers the long-term, taking account of current and future communities¹. Strategic alignment of asset management plans is essential as these plans provide the evidence basis for Auckland Council's investment plans and demonstrate how the council's long-term assets will deliver long-term outcomes for Tāmaki Makaurau.

Strategic direction for asset management comes from Auckland Council, central government and legislation. This note relates to the council direction provided through the Auckland Plan and other Auckland Council strategy.

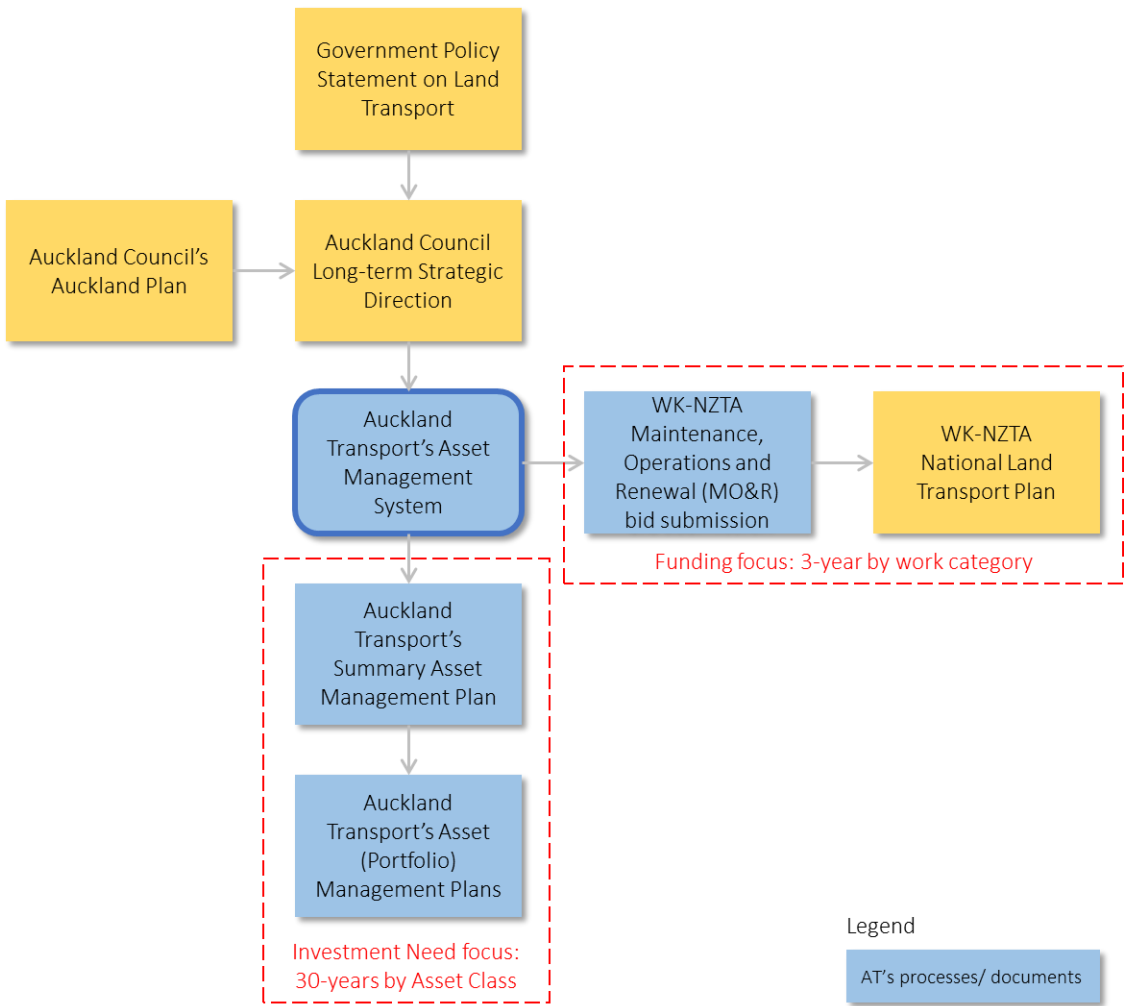
The Auckland Plan provides the long-term strategic direction, and basis for alignment for Council's key strategies and policies. Region-wide strategies articulate the Auckland Plan's strategic intent and outline priorities for implementation. Region-wide strategies include Te Tāruke ā Tāwhiri: Auckland's Climate Plan, The Water Strategy, Ngā Hapori Momoho: Thriving Communities Strategy, The Transport Emission Reduction Plan, and Tāmaki – Whenua Taurikura: Auckland Future Development Strategy 2023-2053.

Auckland Council Group's Strategic Investment Framework for Infrastructure provides the framework for demonstrating alignment of infrastructure investment with Council's long-term regional strategic

¹ Local Government Act 2002, sections 10 and 14

direction. In accordance with this framework below provides a summary of how the investment programme set out in this Asset Management Plan is aligned to Auckland Council direction.

Figure 33: Strategic alignment



Strategic alignment of this document with Auckland Council direction

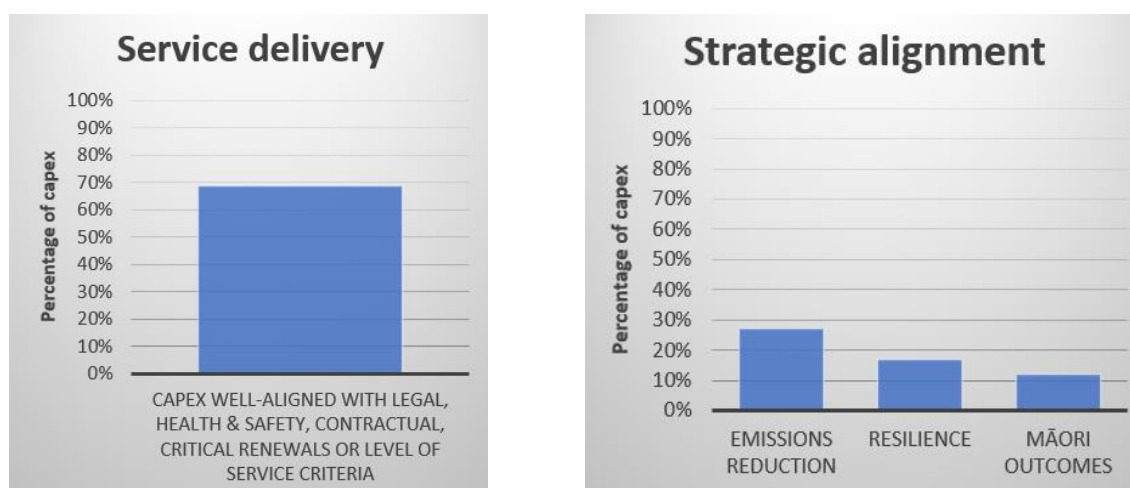
The table below presents the alignment of this 30-year Asset Management Plan and reports on the investment programme with the council’s strategic direction. When considering current alignment, Auckland Council recognises that Auckland Transport’s asset management systems and tools are on a journey of increasing maturity. It is anticipated that Auckland Transport’s ability to demonstrate alignment will grow as asset management maturity improves Council-wide, thereby uplifting long-term planning and reporting capacity.

The proportion of aligned investment identified in the following table (below, column four) draws on the Investment Impact Assessment (IIA) carried out by Auckland Council for the 2024 Long-term Plan (LTP). The IIA framework provides Auckland Council a consistent assessment of planned investments against a set of criteria, including criteria that reflect council’s strategic direction. Capital expenditure (CAPEX) over the 10 years of the LTP is included in the table below and is assessed at the level of major programmes and projects. Each line item was scored against the criteria by representatives of the portfolio including asset managers. Following the completion of the assessment, moderation of the data was completed centrally by Auckland Council staff, together

with asset managers for each criterion on each project or programme to ensure consistency in assessment across the group.

This is the first time Auckland Council's IIA has been presented in asset management plans and so it should be read as a baseline, indicator, or current state, rather than a detailed assessment of Asset Management Plan alignment. Operational expenditure (OPEX) was also included in the 2024 IIA, but has not been included in the table below reporting as OPEX data does not yet have sufficient detail for this purpose.

Figure 34: Key areas of alignment demonstrated through Auckland Council's LTP 2024 Investment Impact Assessment (provided by Auckland Council)



The IIA demonstrates that there is significant alignment of the investment programme with 'non-strategic' service delivery criteria. This is a key driver for the AT portfolio, with 69% of capital expenditure either well, or extremely well aligned with one or more of the service delivery criteria. Key areas of strategic alignment within the 10-year investment plan are emissions reduction, resilience, and Māori outcomes.

The high level of service delivery-driven investment in this portfolio, presents an opportunity for greater levels of strategic alignment in the future. Service delivery-driven investment may be refocused to also delivery strategic outcomes.

Table 11: Alignment to Auckland Council's strategic direction

AC Strategic Direction	Reporting requirement	Alignment of 30-year investment needs	Proportion of 10-year investment aligned with direction ²
Māori Outcomes	Identify investment that has been developed in partnership with Māori, or Māori participation and delivers on outcomes described in Kia Ora Tāmaki Makaurau.	Indirectly supported by this Asset Management Plan by keeping asset in good condition through regular renewal (CAPEX) and maintenance (OPEX).	10-19% of capital expenditure (CAPEX) is well-aligned and delivering towards Māori outcomes
Emissions – reduction targets	Identify projects and programmes that are in line with the emissions reduction commitments under Te Tāruke-ā-Tāwhiri Auckland's Climate Plan, and avoiding or minimising embodied and operational emissions as much as practicable.	Refer this Levels of Service section – Public Transport related emissions customer values.	20-29 % of CAPEX is well-aligned and delivering towards reducing emissions
Resilience – Deliver flexible, adaptable, infrastructure	Identify projects and programmes that increase the resilience of the surrounding existing community and/or ecosystems to natural hazards and climate change in the long-term (30+ years).	Refer this Levels of Service section – Structures related resilience customer values.	10-19% of CAPEX is well aligned and delivering towards climate adaptation and resilience
Equity – Focus on communities of greatest need	Identify projects and programmes are targeted to address disparities and serve the wellbeing of communities of greatest need.	Indirectly supported by this Asset Management Plan by keeping asset in good condition through regular renewal (CAPEX) and maintenance (OPEX).	10-19% of CAPEX is well aligned and delivering towards equity.
Equity – Community -led	Identify projects and programmes and where communities (whānau, hapū, iwi, people) are involved and enabled to lead and/or respond to the investment	Indirectly supported by this Asset Management Plan by keeping asset in good condition through regular renewal (CAPEX) and maintenance (OPEX).	

² Measured using the Investment Impact Assessment undertaken to inform the 2024-33 LTP. For more information on the criteria and methodology see Attachment C here: [Staff Advice to support the Mayoral Proposal \(aucklandcouncil.govt.nz\)](https://aucklandcouncil.govt.nz/staff-advice-to-support-the-mayoral-proposal).

AC Strategic Direction	Reporting requirement	Alignment of 30-year investment needs	Proportion of 10-year investment aligned with direction ²
Environment – Regenerate natural systems, and Te Mauri o te Wai – regenerative and mauri enhancing infrastructure.	Identify projects and programmes that are investments in green infrastructure.	Indirectly supported by this Asset Management Plan by keeping asset in good condition through regular renewal (CAPEX) and maintenance (OPEX).	20-29% of CAPEX programmes include projects identified as nature-based solutions or urban green space ³
Environment – Reduce Waste	Once established, report waste baselines and propose 2030 targets.	Indirectly supported by this Asset Management Plan by keeping asset in good condition through regular renewal (CAPEX) and maintenance (OPEX).	Unknown at time of writing.
Te Mauri o Te Wai: The life-sustaining capacity of water is protected and enhanced.	Identify investment that recognises the impact on Mauri (through working with Mana Whenua) and delivers improvements to Te Mauri o Te Wai.	Indirectly supported by this Asset Management Plan by keeping asset in good condition through regular renewal (CAPEX) and maintenance (OPEX).	0% of CAPEX towards Water Strategy Outcomes
Impactful Procurement: success is dependent on how well Auckland's prosper.	Deliver Auckland Council, or your organisation's Sustainable Procurement objectives.	Auckland Transport plans to support this through sustainable procurement.	Unknown at time of writing.
Growth - Growth Assumptions	Adoption of growth approach and assumptions as basis for AMPs. Identify growth-driven projects/programmes spatially with a catchment of benefit.	Ensuring consequential renewal (CAPEX) and maintenance (OPEX) is available to manage newly vested assets from within Auckland's areas of growth and change.	0-9% of CAPEX is aligned spatially to the spatial priority areas (in the Future Development Strategy).

³ Note that we have committed to raising most of our debt through sustainable finance mechanisms (Auckland Council's Sustainable Finance Framework). A pipeline of green infrastructure is increasingly important to access capital as financial markets become more restrictive and expensive.

AC Strategic Direction	Reporting requirement	Alignment of 30-year investment needs	Proportion of 10-year investment aligned with direction ²
Growth - Quality compact growth	Identify projects and programmes providing infrastructure that supports development planned in Spatial Priority Areas in the next 10 years or is of regional benefit (servicing live-zoned land).	Ensuring consequential renewal (CAPEX) and maintenance (OPEX) is available to manage newly vested assets from within Auckland's areas of growth and change.	
Community - Delivery of multiple outcomes/well-beings	Identify projects and programmes that support community wellbeing: • community connection and resilience • physical and mental health • affordability of access to services for all Aucklanders • skills for the future (workforce transition) • business transformation for resilience and growth • nature in the city (e.g. urban forest, parks that are locally accessible to communities).	Indirectly supported by this Asset Management Plan by keeping asset in good condition through regular renewal (CAPEX) and maintenance (OPEX).	0-9% of CAPEX is well aligned and delivering for community wellbeing
Consider non-built solutions first (investment hierarchy)	Preference (in order) for investment in: • Effective planning • Managing demand • Best use of existing system • Careful new investment	Unsure how this Asset Management Plan supports this at time of writing.	70-79 % of CAPEX delivers on the first three levels of the investment hierarchy (effective planning, managing demand, and best use of existing system).

Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of road network and public transport services are outlined in the following table.

Table 12: Legislative requirements

Legislation	Requirement
Local Government (Auckland Council) Act 2009	• Governance and accountability: Auckland Transport must operate in accordance with the governance, accountability, and transparency requirements for CCOs outlined in Part 5 of the Local Government Act 2002, as applied by the Local Government (Auckland Council) Act 2009. This includes requirements around the appointment of directors, meetings, consultation, and reporting obligations to Auckland Council. • Decision-making processes: Auckland Transport must establish processes to enable Māori to contribute to its decision-making, as required under sections 76-83A, 87 and 89 of the Local Government Act 2002. It must follow principles of consultation and consider views of affected parties when making decisions, as per the Local Government Act 2002 provisions applied by the 2009 Act. • Functions and powers: The 2009 Act sets out Auckland Transport's core functions and powers related to managing Auckland's transport system under sections 46 and 47. This includes acting as a local authority or statutory body for transport purposes, and exercising requiring authority powers under the Resource Management Act. • Directions from Auckland Council: Auckland Council can lawfully direct Auckland Transport to perform or delegate additional transport functions to it under section 46(1)(d) and (e) of the 2009 Act. • Restrictions: Auckland Transport cannot pay dividends and must have regard for public safety, as stipulated in section 50 of the 2009 Act.

Legislation	Requirement
Local Government Act 2002	• Section 59 sets out the principal objectives for Council Controlled Organisations like Auckland Transport, including operating efficiently with a view to making a profit, being a good employer, and exhibiting social and environmental responsibility. • Part 5 of the Act applies to Auckland Transport with some modifications, setting out requirements around governance, accountability, and transparency. • Sections 76-83A, 87 and 89 specifically apply to Auckland Transport, covering matters like the appointment of directors, meetings, consultation requirements, and reporting obligations. • Auckland Transport must have regard for public safety in relation to its structures and operations. • Auckland Transport is exempt from the requirement under section 68(b) to pay dividends to Auckland Council.
Land Transport Act 1998	• Enforcing road user rules and regulations: Auckland Transport has the authority to issue infringement notices for offences related to road user behaviour, such as speeding, failing to stop at red lights, illegal parking, and other traffic violations, as outlined in the Act and associated regulations. • Licensing transport service operators: The Act requires operators of certain transport services, like passenger services and goods services, to hold the appropriate licenses. Auckland Transport is responsible for ensuring compliance with these licensing requirements within Auckland. • Promoting road safety: A key purpose of the Act is to promote safe road user behaviour and vehicle safety. Auckland Transport undertakes various initiatives, campaigns, and infrastructure improvements to enhance road safety in line with this objective. • Implementing traffic management measures: The Act empowers road controlling authorities like Auckland Transport to install and maintain traffic control devices, establish special vehicle lanes, and implement other traffic management measures to ensure the safe and efficient movement of traffic. • Enforcing vehicle standards: Auckland Transport has the authority to inspect vehicles and issue notices for non-compliance with vehicle standards and requirements set out in the Act and associated regulations, such as those related to vehicle dimensions, weights, and equipment.

Customer Values

Service levels are defined in three ways, customer values, customer levels of service and technical levels of service.

Auckland Transport's customer values indicate safety, asset condition, and asset maintenance are important to Auckland Transport customers.

Table 13: Customer values

Customer values	Customer satisfaction measure	Current achievement	Anticipated trend based on planned budget
Road network			
Safety	Reduce deaths and serious injuries on the road network.	In the last 12 months, there were 38 deaths and 583 serious injuries on Auckland's roads, a 6% decrease from the previous year.	CAPEX budgets (service level improvements) are anticipated to be maintained.
Customer response	Responding to customer complaints and feedback	Current achieving the target of 85% within the agreed timeframes.	Maintenance (OPEX) budgets are anticipated to increase.

Customer Levels of Service

The Customer Levels of Service, related to assets, are considered in terms of the following service measures:

- Condition – Does the asset support the provision of a valued customer service? What is the condition or quality of the asset?
- Function – Is it suitable for its intended purpose? Is it the right service?
- Capacity/ use – Is the asset over or under used? Do we need more or less of these assets?

The following table summarises the current performance, and the expected performance based on the current budget allocation, for each of the above customer service measures.

These are measures relate to service delivery outcome (e.g. number of occasions when service is not available or proportion of replacement value by condition %'s) aim to provide a balance in comparison to the customer perception that may be more subjective.

Table 14: Customer Level of Service Measures

Type of measure	Level of Service	Performance measure	Current performance	Anticipated trend based on planned budget
Condition Confidence level: HIGH	Assets are kept in Acceptable condition.	Asset condition assessments.	\$768 million* of assets are currently in Unacceptable condition.	Renewal (CAPEX) and maintenance (OPEX) budgets are anticipated to increase.
Function Confidence level: MEDIUM	Assets are fit for purpose.	Customer feedback on current services.	A decreasing trend in customer satisfaction since 2021.	CAPEX budgets (service level improvements) are anticipated to increase.
Capacity/ use Confidence level: MEDIUM	The quantum of assets is appropriate.	Customer feedback on current services.	Current capacity is on target.	CAPEX budgets (new works growth) are anticipated to be maintained.

The confidence levels for each measure are defined as follows:

- High – Professional judgement supported by extensive data analysis.
- Medium – Professional judgement supported by data sampling.
- Low – Professional Judgement with no data evidence.

Condition assessments and surveys are carried out in accordance with our professional services contracts and road maintenance contracts. The road maintenance contract, Volume 5 technical specification, set out the agreed customer response times for emergency, reactive and programmed maintenance works. The relevant specifications are listed:

- Road Corridor Maintenance, Volume 5 Technical Specification
- Transport Networks Asset Management contract

Technical Levels of Service

To deliver to customer values and achieve customer levels of service, more operationally focused technical measures (technical levels of service) are required. These technical measures relate to the activities and allocation of resources (budgets and staff) to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- Acquisition: New works growth (CAPEX) – To provide new infrastructure assets or increase the capacity of existing assets to cater for growth in demand for services from a growing population or economic development.

- Acquisition: Service level improvements (CAPEX) – To upgrade or enhance existing infrastructure assets to improve level of service provided to the community, in line with statutory obligations and community consultation requirements.
- Renewal (CAPEX) – To replace existing infrastructure assets that have reached the end of their useful life with new assets of the same service potential, to maintain the ability to deliver the required level of service.
- Maintenance (OPEX) – To undertake regular servicing, repairs, and preventative maintenance activities on existing infrastructure assets to ensure they remain operational and able to deliver the required level of service over their expected useful life.
- Operations (OPEX) – To manage and operate the infrastructure assets on a day-to-day basis, including activities like monitoring, inspections, and managing service requests, to ensure the continued delivery of the required level of service.

Service and asset managers plan, implement and manage these technical service levels to enable Auckland Transport's service delivery outcomes.

The following table summarises the asset-related activities anticipated under current proposed budget allocations, along with the forecasted activity investment needs being recommended.

Table 15: Technical Levels of Service

Lifecycle activity	Activity measure	Recommended performance (Investment Needs)*	Planned performance (RLTP budget)**
Acquisition: New works growth (CAPEX)	Capacity increases	As defined in the RLTP.	As defined and agreed by Auckland Transport's strategy and RLTP teams.
Acquisition: Service level improvement (CAPEX)	Improvements in services	As defined in the RLTP.	As defined and agreed by Auckland Transport's strategy and RLTP teams.
	10-year forecasts		\$2.97 billion
Renewal (CAPEX)	Proactive renewals	Proactive renewals is occurring (funded by Depreciation).	Some proactive renewals
	10-year forecasts	\$8.71 billion	\$4.81 billion
OPEX – maintenance and operations	Proactive maintenance. Proactive asset inspections. Proactive asset condition assessments.	Proactive maintenance, for both existing and new assets coming on-stream, is funded. Proactive asset inspections are funded. Proactive asset condition assessments are funded.	Mostly focused on proactive maintenance. Some reactive maintenance will likely be required. Most asset inspections and condition assessment can occur.
	10-year forecasts	\$1.08 billion	\$1.06 billion

Notes:

- * Current activities related to planned RLTP budget.
- ** Expected performance related to forecasted Investment Needs lifecycle costs.

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on current resource provision (financial and personnel), work efficiencies, and deliverability. It is acknowledged changing circumstances such as technology and customer priorities will change over time.

Growth and Demand

Auckland's growth

As of 2023, Auckland's population was estimated at 1.71 million according to Auckland Council's medium projection. The region's population is growing and changing, with these recent growth forecasts indicating Auckland is anticipated to grow by 17,000+ people each year to reach an estimated population of 2.23 million by 2053. The following graph presents Auckland Council's most recent population projections.

Figure 35: Auckland Council population projections



To support this growth, Auckland Transport and private developers invest in new assets also install or construct new assets, particularly in key growth areas, that will ultimately be vested to Auckland Transport to manage and maintain.

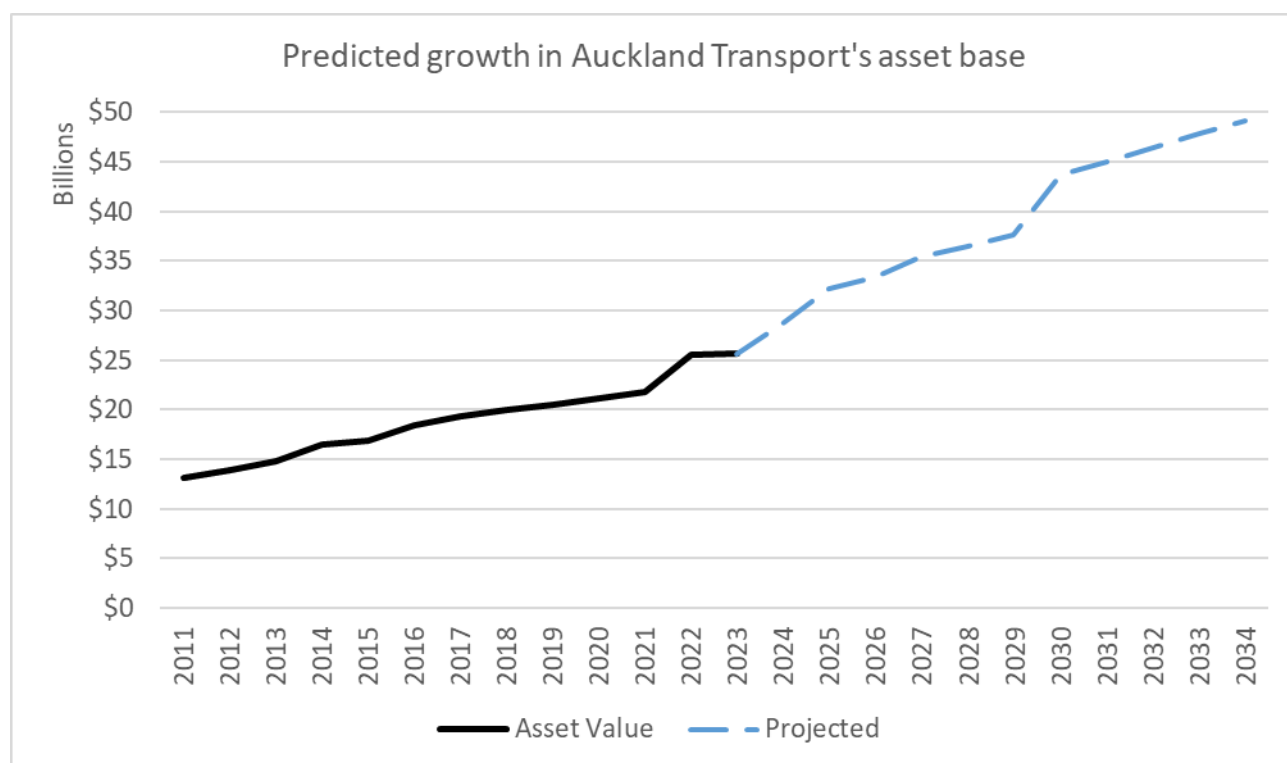
Based on recent year actuals, the forecast annual growth in Auckland Transport's asset base is:

- 74km (+1.1%) of new sealed roads per year.
- Additional stormwater drainage, street lighting and road structures in proportion to the annual sealed road growth (+1.1%).
- 104km (+1.4%) of new footpaths per year.
- 10km (+2.9%) of new protected cycleways per year.
- 15 (+2.3%) new signalised intersections per year.

New assets require additional maintenance, operations, and renewal activities and therefore funding. The following graph presents the actual and projected uplift in Auckland Transport's physical asset ownership that will require on-going maintenance, operation, and renewal. Since

2013, there has been an average annual increase in the asset base value of 6.4%, resulting in a near-doubling of the value of the asset base over the period.

Figure 36: Predicted growth in Auckland Transport's asset base



Demand Drivers

Drivers affecting demand include things such as:

- Growth and intensification: Expanding or intensifying the urban area.
- Change in asset utilisation: Change in asset use to provide increased or other services.
- The current state of assets: Deteriorating and aging infrastructure.
- Extreme weather events: The requirement for climate change adaptation.
- Cost increases: Inflation, material, and personnel cost increases etc.
- The current backlog of renewal/ maintenance: The existing asset maintenance/ renewal needs.
- Funding: The appropriate level of funding to enable judicious asset management.

Demand Impact and Management Plan

The impact of demand drivers that may affect future service delivery and use of assets are shown in the following table. Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in the table below. Further opportunities will be developed in future revisions of this plan.

Table 16: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Growth and intensification: Expanding or intensifying the urban area.	Housing growth and intensification requires increased truck volume, weight and turning movements on assets that may not be designed to cater for those volumes and loadings. This exerts significant stress and pressure on assets resulting in accelerated asset deterioration, manifesting in increased faults such as pavement rutting, cracking, and potholes, along with broken footpaths, and kerb and channels.	Auckland will continue to grow – expand and intensify. Population growth will continue requiring new and improved services, along with the supporting infrastructure.	Services will need to change over time to cater for the anticipated uplift in customer expectations.	Through the provision of the appropriate infrastructure – right time, right place.
Change in asset utilisation: Change in asset use to provide increased or other services.	The change in the use of an asset, for example, to cater for higher loadings, volumes etc. will exert significant stress and pressure on assets resulting in accelerated asset deterioration, manifesting in increased faults such as pavement rutting, cracking, and potholes, along with broken footpaths, and kerb and channels. This requires additional investment, over and above programmed renewals, to ensure these assets can cater for this change in asset utilisation.	Auckland Transport's infrastructure will need to continue to change to cater for the change in utilisation.	Services will need to change over time to cater for the anticipated uplift in customer expectations.	Through the provision of the appropriate infrastructure – right time, right place.

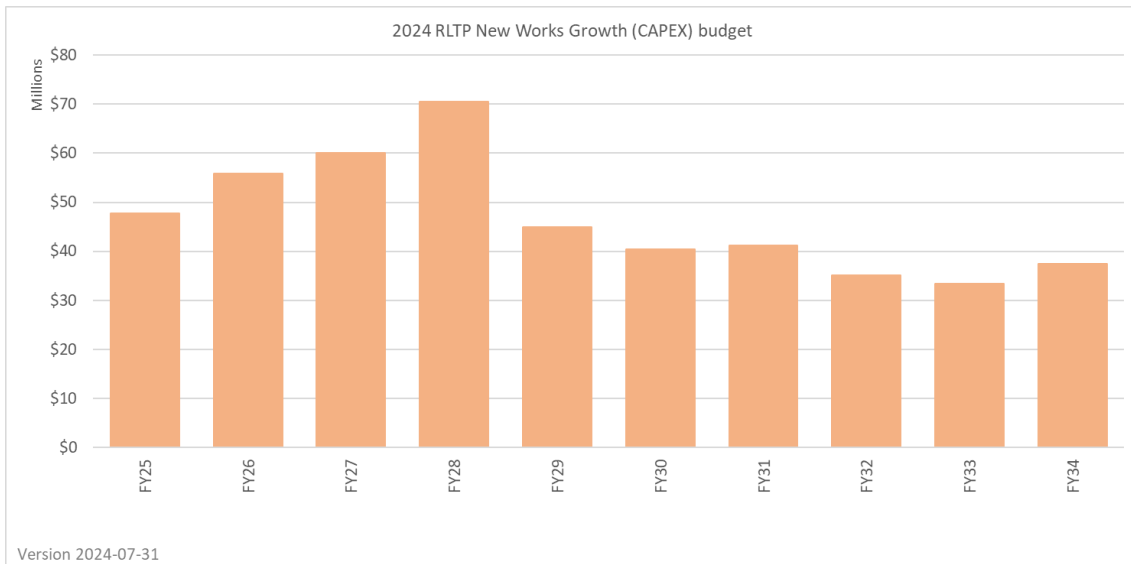
Demand driver	Current position	Projection	Impact on services	Demand Management Plan
The current state of assets: Deteriorating and aging infrastructure.	The condition of Auckland Transport's infrastructure is deteriorating or reaching/ exceeded their expected lifespan. This will require increased maintenance costs, higher renewal costs, and potential obsolescence. Renewing or retrofitting deteriorating or aging infrastructure is costly and classically logistically challenging.	The deterioration in Auckland Transport's existing infrastructure is managed and not allowed to get worse.	Current services can be maintained and even improved.	Through appropriate asset maintenance and renewal strategies.
Extreme weather events: The requirement for climate change adaptation.	The recent storms and flooding events have damaged infrastructure, disrupt services, and increase the need for urgent maintenance and renewals.	The evidence indicates continued and increased extreme weather events.	Services will continue to be impacted by sudden extreme weather events.	Infrastructure related climate change adaptation strategies.
Cost increases: Inflation, material, and personnel cost increases etc.	Over the latest funding period cost increases, up to 25%, have meant reduced maintenance and renewal works can be achieved within the available budget. This has exacerbated the backlog in maintenance and renewal works.	Costs are expected to continue to rise.	Auckland Transport may not be able to maintain current service levels.	Ensure funding is available.
The current backlog of renewal/ maintenance: The existing asset maintenance/ renewal needs.	The accumulation of maintenance and renewal works to be done to maintain an asset's integrity will negatively impact an asset's ability to enable sustainable customer services and create a greater financial burden on future generations.	An increased strain on financial resources.	Auckland Transport may not be able to maintain current service levels.	Ensure funding is available.

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Funding: The appropriate level of funding to enable judicious asset management.	Limited financial resources hinder infrastructure maintenance efforts, leading to deferred maintenance and renewals, increased vulnerability of sudden or catastrophic infrastructure failures and reduced ability to deliver agreed services.	Auckland Transport will continue to operate within constrained Maintenance (OPEX) and Renewals (CAPEX) envelopes.	Auckland Transport may not be able to maintain current service levels.	Ensure funding is available.

Meeting Demand

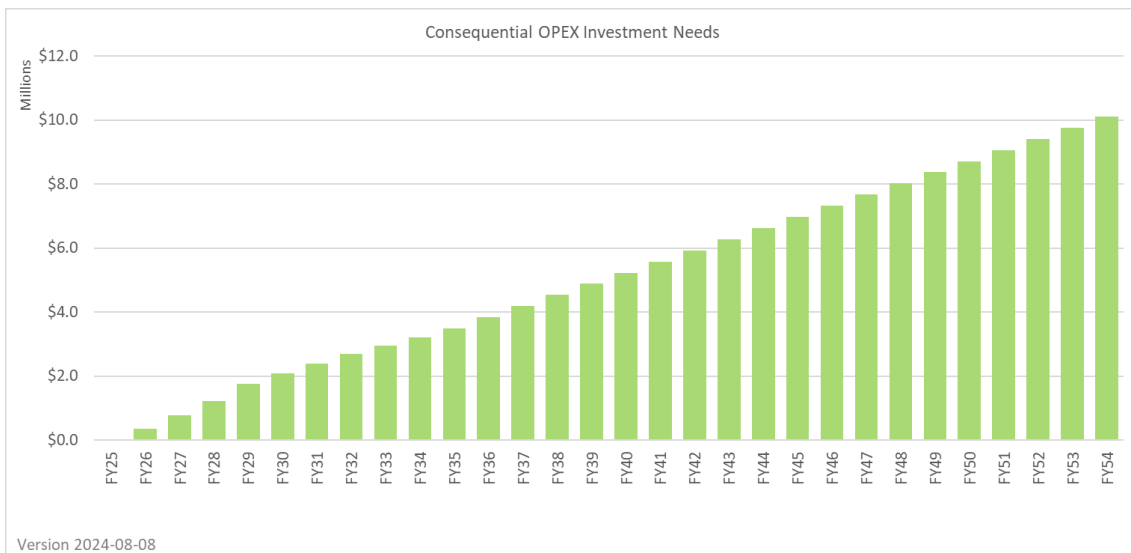
The new assets required to meet demand are either acquired or constructed by Auckland Transport or vested to Auckland Transport from private developers. The following graphs presented the New Works Growth (CAPEX) budgets, agreed by the RLTP team, to help meet that ratepayer and asset user demand.

Figure 37: 2024 RLTP New Works Growth (CAPEX) budgets



Any new asset will commit Auckland Transport to ongoing operations and maintenance funding for the period that the service provided from the assets is required. These future consequential costs (Consequential OPEX) have been modelled and included in the long-term Asset Management Investment Needs – refer the following graph.

Figure 38: Consequential OPEX Investment Needs



Climate Change Adaptation

The impacts of climate change may have a significant impact on the assets we manage and the services they provide. In the context of the Asset Planning process climate change can be considered as both a future demand and a risk.

How climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts. As a minimum we consider how to manage our existing assets given potential climate change impacts for our region.

Risk and opportunities identified to date are shown in the following table.

Table 17: Managing the Impact of Climate Change on Assets and Services

Climate Change Description	Projected change	Potential Impact on Assets and Services	Management
Landslips – under slips/ over slips	Increase in extreme and consecutive rainfall are likely to increase the occurrence of landslips.	Risk to Auckland Transport's roading and structures infrastructure and services.	Adapt existing infrastructure to uplift its resilience to extreme weather events. Increase frequency of proactive maintenance and monitoring. Revegetation to help manage run-off.
Coastal hazards (erosion, instability, inundation)	Rising sea level puts coastal communities and infrastructure at risk from inundation and erosion. Under RCP 8.5, 1m sea level rise is projected by the end of this century. Other coastal hazards will be exacerbated because of sea level rise.	Risk to Auckland Transport's infrastructure and services within coastal areas.	Coastal protection. Adapt existing infrastructure to uplift its resilience coastal hazards.
Sea level/groundwater rise.	Under RCP 8.5, 1m sea level rise is projected by the end of this century.	Elevated groundwater levels cause damage to the road formation.	Adapt existing asset to 100-year sea level rise predictions. Employ realignment and/ or retreat strategies.
Rainfall and flooding	More extreme rainfall and flooding events are expected. Seasonal distribution of rainfall is projected to change with wetter autumns and drier springs.	Risk to Auckland Transport's infrastructure, in particular roading, structures and stormwater assets and services.	Adapt existing infrastructure to uplift its resilience to extreme weather events. Increase frequency of proactive maintenance and monitoring. Enable stormwater retention/ detention.

Climate Change Description	Projected change	Potential Impact on Assets and Services	Management
Winds	The intensity of tropical cyclones is expected to increase.	Risk structural infrastructure and high-sided vehicles.	Adapt existing infrastructure to uplift its resilience to extreme wind events. Design assets to a 100-year storm events
Temperature	Increasing in extreme temperatures – significantly hotter days with frost to become rarer.	Risk to roading infrastructure and services.	Increased vegetation – shade protection. Proactive pavement maintenance.
Drought	Droughts are expected to become more common.	Risk to road infrastructure and services due to drought.	Proactive pavement maintenance. Adapt existing infrastructure to uplift its resilience to drought events.
Wildfire	The possibility of wildfires is projected to increase.	Risk to Auckland Transport's infrastructure and services.	Adapt existing infrastructure to uplift its resilience to wildfire events.

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Building resilience can have the following benefits:

- assets will withstand the impacts of climate change;
- services can be sustained; and
- assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint.

The following table summarises some asset-related climate change resilience and adaptation opportunities.

Table 18: Building in Asset Resilience to Climate Change

New assets (portfolio)	Impact on these assets.	Build resilience in new works
Transport Network	Climate change related events will impact the delivery of services that rely on roading assets – coastal hazards, groundwater/ sea level rise, extreme rainfall and flooding, high winds, extreme temperatures etc.	Ensure new Transport Network infrastructure has a high level of resilience to, for example, coastal hazards, groundwater/ sea level rise, extreme rainfall and flooding, high winds, and extreme temperatures.

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this plan.

Manging the Risks

Auckland Transport's risk management processes aim to manage future risks through the identification, assessment and treatment of risks associated with providing services from infrastructure. Where appropriate these processes align to the International Standard ISO 31000:2018 Risk management.

Through this process the Auckland Transport's Board has defined the organisation's Critical and Non-critical infrastructural assets and have put in place process managed by Risk Services team to identify, assess, prioritise, and treat risks within a structured risk management framework.

Whilst Auckland Transport may not be able to eliminate risks altogether, informed decisions around the anticipated events are able to be made, along with how the likelihood impact of risks can be reduced to an acceptable level.

Asset Management Risks

The following trends and future risks are currently applicable to the management of Auckland Transport's infrastructural assets.

- **Insufficient funding:** Limited financial resources hinder infrastructure maintenance efforts, leading to deferred maintenance and renewals, increased vulnerability of sudden or catastrophic infrastructure failures and reduced ability to deliver agreed services.
- **Deteriorating and aging infrastructure:** The condition of Auckland Transport's infrastructure is deteriorating or reaching/ exceeded their expected lifespan. This will require increased maintenance costs, higher renewal costs, and potential obsolescence. Renewing or retrofitting deteriorating or aging infrastructure is costly and classically logistically challenging.
- **Extreme weather events:** Recent storms and flooding events have damaged infrastructure, disrupt services, and increase the need for urgent maintenance and renewals.
- **Cost increases:** Over the latest funding period cost increases, up to 25%, have meant reduced maintenance and renewal works can be achieved within the available budget. This has exacerbated the backlog in maintenance and renewal works.
- **Growing backlog of maintenance requirements:** The accumulation of maintenance and renewal works to be done to maintain an asset's integrity will negatively impact an asset's ability to enable sustainable customer services and create a greater financial burden on future generations.
- **The impact of growth and intensification:** Housing growth and intensification requires increased truck volume, weight and turning movements on assets that may not be designed to cater for those volumes and loadings. This exerts significant stress and pressure on assets resulting in accelerated asset deterioration, manifesting in increased faults such as pavement rutting, cracking, and potholes, along with broken footpaths, and kerb and channels.
- **The impact of change in asset utilisation:** The change in the use of an asset, for example, to cater for higher loadings, volumes etc. will exert significant stress and pressure on assets resulting in accelerated asset deterioration, manifesting in increased faults such as pavement rutting, cracking, and potholes, along with broken footpaths, and kerb and channels. This requires additional investment, over and above programmed renewals, to ensure these assets can cater for this change in asset utilisation.

- **Environmental and sustainability:** Maintaining public infrastructure while minimising environmental impact is a concern. Balancing the need for infrastructure maintenance and renewals with sustainability goals, reducing carbon emissions, and adopting eco-friendly practices is complex and requires careful planning and investment.
- **Workforce shortage and skills gap:** There is a shortage of technically competent personnel in both Local Government and Maintenance Contractor sectors. The ability of our maintenance contractors to delivery is severely constrained currently. The lack of qualified professionals is hampering maintenance and renewal efforts.
- **Maintenance contractor productivity:** The ability for Maintenance Contractors to undertake maintenance and renewal works is reduced due to concerns around such things as noise and pollution.

Critical Assets

Of Auckland Transport's \$21 billion worth of Transport Networks infrastructure assets, \$2.51 billion (12%) assets are 'Critical' to Auckland Transport's delivery of transport services to rate payers and asset users. These assets are defined as those which have a high consequence of failure causing significant loss or reduction of service.

The following table presents those critical assets, along with their typical failure mode, and likely impact on service delivery.

Table 19: Auckland Transport's Transport Networks Critical Assets

Critical asset	Value	Key failure mode	Impact
Main roads	\$2.51 billion	Inadequate carriageway maintenance.	• Safety risk to road users. • Damage to private vehicles. • Increase fuel consumption and omissions.
Total Critical Assets	\$2.51 billion		

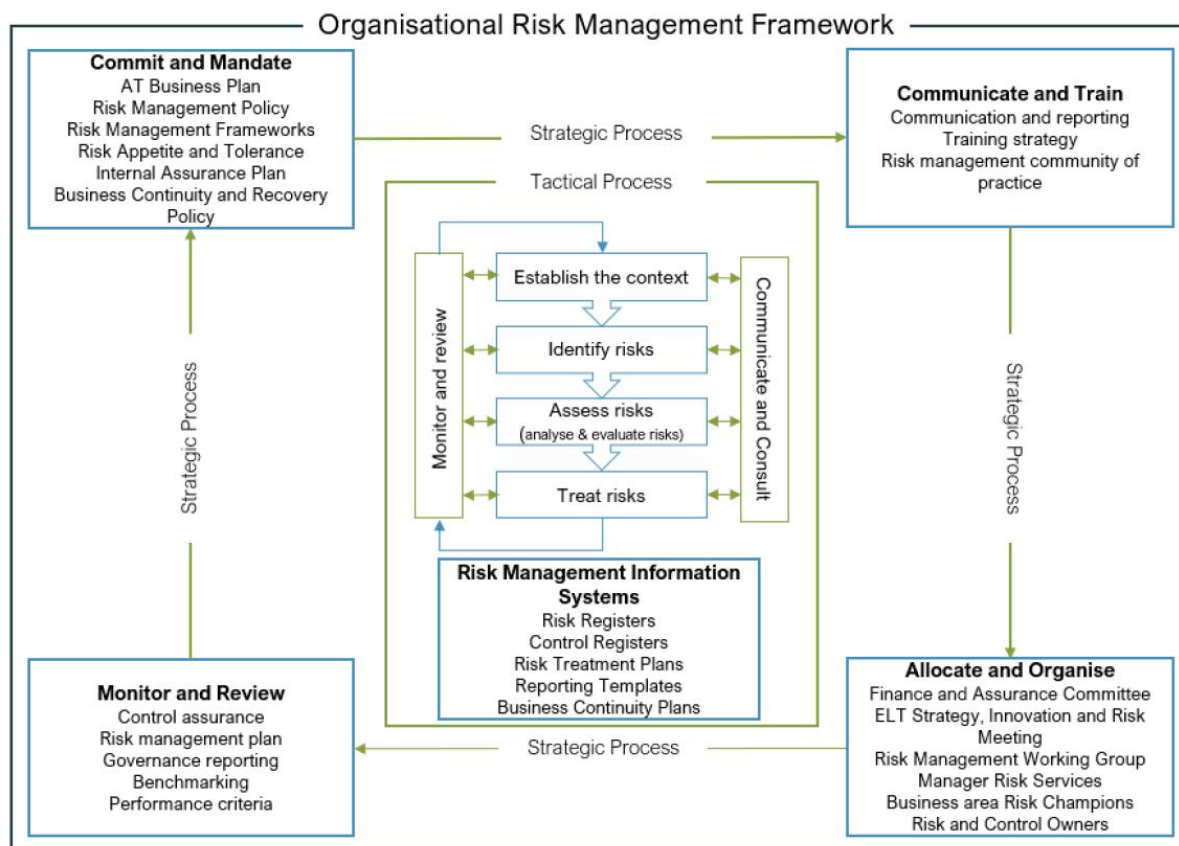
Through the identification of these critical assets and failure modes Auckland Transport can ensure that infrastructural asset inspections, condition assessments and maintenance programmes are implemented appropriately.

Risk Assessment

Auckland Transport's Risk Services team supports the business in the identification, assessment, prioritisation, and treatment within a structured risk management framework – enterprise risk management processes and business continuity planning. This is monitored and reported through to Auckland Transport's Finance and Assurance Committee encapsulating strategic, operational, financial, and external risks.

Auckland Transport's risk management process is shown in the following figure.

Figure 39: Auckland Transport's Organisational Risk Management process



The Active Risk Manager (ARM) system is the technical enabler utilised by Auckland Transport in support of the organisation's end-to-end risk management process. ARM's functionality enables the recording, assessment and support the mitigation of organisation risks identified. Its use aligns to Auckland Transport's:

- Organisational Risk Management Framework (ORMF), which is aligned to the fundamentals of International Standards, ISO 31000:2018 – Risk Management.
- Project Risk Management guide which supports project management and programmes of work.

ARM provides reporting functionality to internal Risk Managers, the Executive Leadership Team (ELT), Auckland Transport's Board of Directors and our business partners.

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Critical risks are those assessed with 'Very High' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. The

residual risk and treatment costs of implementing the selected treatment plan is shown in Table 6.2. It is essential that these critical risks and costs are reported to management and the Auckland Transport.

Table 20: Risks and treatment plans

Future risk	What can happen	Impacted service/ asset portfolio	Risk rating (Very high, High)	Treatment	Residual risk*
Insufficient funding	Limited financial resources hinder infrastructure maintenance efforts, leading to deferred maintenance and renewals, increased vulnerability of sudden or catastrophic infrastructure failures and reduced ability to deliver agreed services.	Public Transport. Transport Structures. Transport Networks.	Very high	• Long-term planning: Develop a sustainable financial plan that accounts for long-term infrastructure needs. This includes forecasting future funding requirements. • Diversify funding sources: Seek additional funding from various channels, such as grants, public-private partnerships, or community contributions. • Budget reallocation: Allocate funds strategically based on priority areas. Consider reallocating funds from non-essential projects to critical infrastructure needs.	• Deferred maintenance: Even with mitigation efforts, there may still be deferred maintenance due to limited resources. • Partial service disruption: Inadequate funding could lead to partial service disruptions or reduced service quality. • Emergency failures: Sudden infrastructure failures may occur if critical components are not adequately maintained.
Deteriorating and aging assets	The condition of Auckland Transport's infrastructure is deteriorating or reaching/ exceeded their expected lifespan. This will require increased maintenance costs, higher renewal costs, and potential obsolescence. Renewing or retrofitting deteriorating or aging infrastructure is costly and classically logistically challenging.	Public Transport. Transport Structures. Transport Networks.	Very high	• Uplift the asset inspection/ condition assessment program: Ensure the assessment of the current state of assets, understanding their risk as they age, and collecting relevant data is able to done. Prioritise rehabilitation, repair, or replacement strategies based on this assessment. • Uplift predictive maintenance: Implement predictive maintenance techniques. Monitor asset health using sensors, historical data, and predictive models. Address issues before they escalate. • Uplift lifecycle cost analysis: Evaluate the minimum life-cycle costs for each asset. Consider not only initial costs but also ongoing maintenance, energy consumption, and replacement expenses. • Uplift renewal planning: Prioritise assets based on their criticality and expected lifespan. Allocate funds strategically for timely renewal.	• Unexpected failures: Aging infrastructure may experience sudden failures, leading to service disruptions or safety hazards. • Budget constraints: Limited funding could hinder timely renewal efforts, resulting in prolonged use of deteriorating assets. • Obsolescence: Technological advancements may render certain assets obsolete, requiring costly upgrades or replacements.
Extreme weather events	Recent storms and flooding events have damaged infrastructure, disrupt services, and increase the need for urgent maintenance and renewals.	Public Transport. Transport Structures. Transport Networks.	High	• Preparedness and early warning systems: Invest in robust early warning systems to predict extreme weather events. • Infrastructure resilience: Design and construct infrastructure to withstand extreme conditions (e.g., reinforced bridges, flood-resistant buildings). Elevate critical infrastructure above flood levels. Implement green infrastructure (e.g., permeable pavements, rain gardens) to manage excess water.	• Infrastructure damage: Even with preparedness, extreme events can cause damage. • Service disruptions: Interruptions in services (transport, utilities) may occur during and after extreme weather. • Resource constraints: Limited resources may hinder emergency maintenance and repair efforts.
Cost increases	Over the latest funding period cost increases, up to 25%, have meant reduced maintenance and renewal works can be achieved within the available budget. This has exacerbated the backlog in maintenance and renewal works.	Public Transport. Transport Structures. Transport Networks.	High	• Alternative funding sources: Explore additional funding options. • Cost control measures: Regularly review project/ maintenance budgets and expenses. Implement cost-saving strategies, such as competitive bidding, and efficient resource allocation. • Prioritisation: Prioritise critical maintenance and renewal works based on safety, functionality, and impact. Allocate funds to critical services/ assets first. • Risk contingency planning: Develop contingency plans for unexpected cost increases. Set aside reserves or emergency funds to address unforeseen expenses.	• Deferred major maintenance works: Limited budgets may result in postponed maintenance and renewal works. • Quality compromises: Reduced funding will lead to compromises in work quality. • Backlog accumulation: The existing backlog may worsen if cost constraints persist.

Future risk	What can happen	Impacted service/ asset portfolio	Risk rating (Very high, High)	Treatment	Residual risk*
Growing backlog of maintenance requirements	The accumulation of maintenance and renewal works to be done to maintain an asset's integrity will negatively impact an asset's ability to enable sustainable customer services and create a greater financial burden on future generations.	Public Transport. Transport Structures. Transport Networks.	High	• Clear communication channels: Ensure effective communication channels for reporting and addressing backlog items. • Prioritisation: Evaluating the existing backlog and prioritise maintenance based on safety, regulatory compliance, and impact on services. • Technology and automation: Implement a robust Computerized Maintenance Management System (CMMS) to track and manage maintenance tasks efficiently. • Predictive maintenance tools: Use sensors and data analytics to predict asset failures and schedule maintenance proactively.	• Service disruptions: Backlogged major maintenance will lead to service interruptions or reduced quality. • Safety concerns: Critical safety-related tasks may be delayed. • Financial strain: The backlog will likely continue to strain financial resources.
The impact of growth and intensification	Housing growth and intensification requires increased truck volume, weight and turning movements on assets that may not be designed to cater for those volumes and loadings. This exerts significant stress and pressure on assets resulting in accelerated asset deterioration, manifesting in increased faults such as pavement rutting, cracking, and potholes, along with broken footpaths, and kerb and channels.	Transport Networks.	High	• Infrastructure assessment and design: Evaluate existing infrastructure (roads, footpaths, kerbs) to determine their load-bearing capacity. Strengthen existing assets where needed to accommodate increased truck volume and weight. Design critical areas to withstand heavier loads. • Maintenance and repairs: Conduct frequent inspections to identify signs of deterioration (rutting, cracking, potholes). Address faults promptly to prevent further damage. Apply appropriate surface treatments (e.g., resurfacing, patching) to extend asset life. • Traffic management: Optimize truck movements to minimise stress on vulnerable assets. Implement weight restrictions where necessary. Utilise speed bumps or traffic islands to reduce heavy vehicle speeds.	• Rapid deterioration: Intensification may still lead to increased asset deterioration rates. • Budget constraints: Funding limitations will continue to impact timely repairs. • Safety concerns: Faults like broken footpaths and kerbs pose safety risks.
The impact of change in asset utilisation	The change in the use of an asset, for example, to cater for higher loadings, volumes etc. will exert significant stress and pressure on assets resulting in accelerated asset deterioration, manifesting in increased faults such as pavement rutting, cracking, and potholes, along with broken footpaths, and kerb and channels. This requires additional investment, over and above programmed renewals, to ensure these assets can cater for this change in asset utilisation.	Transport Structures. Transport Networks.	High	• Increased asset monitoring: Conduct frequent inspections to identify signs of deterioration (rutting, cracking, potholes). Where possible, utilise sensors and data analytics to monitor asset condition continuously. • Asset maintenance: Address maintenance issues proactively before they escalate. • Adaptive design and retrofitting: Retrofit assets to handle increased loads (e.g., reinforcing bridges, pavements). Plan for adaptability and design assets with flexibility to accommodate changing needs. • Load testing: Assess the capacity of existing assets to handle higher loads.	• Unforeseen failures: Assets may still experience sudden failures due to increased stress. • Service disruptions: Asset deterioration could lead to service interruptions. • Budget constraints: Additional investment may strain available resources.

Future risk	What can happen	Impacted service/ asset portfolio	Risk rating (Very high, High)	Treatment	Residual risk*
Environmental and sustainability	Maintaining public infrastructure while minimising environmental impact is a concern. Balancing the need for infrastructure maintenance and renewals with sustainability goals, reducing carbon emissions, and adopting eco-friendly practices is complex and requires careful planning and investment.	Transport Structures. Transport Networks.	High	• Project assessments: Conduct a comprehensive asset whole-of-lifecycle assessment of all infrastructure projects. Consider environmental impacts from construction to decommissioning. Utilise materials and designs with lower environmental footprints. • Promote green infrastructure: Integrate green solutions (e.g., green roofs, permeable pavements) into infrastructure design. Enhance biodiversity and reduce stormwater runoff. Prioritize nature-based solutions. • Endorse energy efficiency: Retrofit existing assets for energy efficiency (e.g., LED lighting, efficient HVAC systems). Invest in renewable energy sources (solar, wind) for infrastructure operations. • Sponsor recycling practices: Promote reuse, recycling, and repurposing of materials. Design infrastructure with disassembly and recycling in mind.	• Budget constraints: Sustainable practices will require additional investment. • Trade-offs: Balancing sustainability with operational needs will be challenging. • Unforeseen environmental impacts: Unexpected consequences may arise during the asset lifecycle.
Workforce shortage and skills gap	There is a shortage of technically competent personnel in both Local Government and Maintenance Contractor sectors. The ability of our maintenance contractors to delivery is severely constrained currently. The lack of qualified professionals is hampering maintenance and renewal efforts.	Public Transport. Transport Structures. Transport Networks.	High	• Knowledge transfer and succession planning: Pair experienced employees with newcomers. Capture institutional knowledge for future use. Identify potential leaders and groom them for critical roles. • Reskilling and upskilling: Develop training programs to enhance existing employees' skills. Enable employees to learn new skills related to their roles. Encourage employees to pursue relevant certifications. • Talent acquisition: Recruit skilled professionals actively seeking employment. • Collaboration with educational institutions: Partner with schools, colleges, and technical institutes to offer practical training. Collaborate on curriculum development and skill-building initiatives.	• High turnover: Retaining skilled employees may be challenging. • Delayed projects: Skill shortages could lead to project delays. • Quality compromises: Inexperienced staff may impact work quality.
Maintenance contractor productivity	The ability for Maintenance Contractors to undertake maintenance and renewal works is reduced due to concerns around such things as noise and pollution.	Public Transport. Transport Structures. Transport Networks.	High	• Noise mitigation: Plan maintenance activities during non-peak hours to minimise noise disruption. Erect barriers or soundproof enclosures around work areas. Utilise quieter machinery and tools where possible. • Pollution control: Ensure contractors comply with emission standards for vehicles and equipment. Properly manage waste generated during maintenance. Encourage sustainable practices (e.g., using eco-friendly materials) by contractors.	• Contractor productivity: Balancing productivity with noise/ pollution constraints will be challenging and likely costly. • Regulatory compliance: Ensuring ongoing compliance with environmental regulations.

Note * The residual risk is the risk remaining after the selected risk treatment plan is implemented.

Infrastructure Resilience Approach

The resilience of Auckland Transport's infrastructure is vital to the ongoing provision of transportation services to rate payers and asset users. To adapt to changing conditions Auckland Transport needs to understand the capacity of the infrastructure under its asset management to 'withstand a given level of stress or demand', and to respond to possible disruptions to ensure continuity of service.

Auckland Transport's current measure of resilience is summarised in the following table which includes the type of threats and hazards and the current measures that the organisation takes to ensure service delivery resilience.

Table 21: Resilience assessment

Threat/ hazard	Assessment method	Current approach
Natural events – extreme weather events, tsunamis, earthquakes, volcanoes, floods, and king tides.	Auckland Council's Emergency Management group's "4 Rs" process – Reduction, Readiness, Response, and Recovery	High confidence
Failure of 'Lifeline Utilities' – energy, water, telecommunications, and transportation	Auckland Council's Emergency Management group's "4 Rs" process – Reduction, Readiness, Response, and Recovery	High confidence
Climate change.	Under development	Low confidence
The resilience of Auckland Transport's existing infrastructure to support the delivery of future transportation services.	Under development	Low confidence

Service and Risk Trade-offs

The decisions made in adopting this plan are based on the objective to achieve the optimum benefits from the available funding and resources.

What we cannot do

Given Auckland Transport relies on maintenance contractors and consultants to undertake key asset management task, the current funding levels will clearly impact Auckland Transport's ability to deliver certain Asset Management activities, including:

- Lifecycle renewal and maintenance activities.
- Renewals cannot keep pace with the rate of asset depreciation.

Service trade-offs

If there is forecasted and programmed asset management works – operations, maintenance, renewal, acquisition, or disposal – that cannot be undertaken due to available funding this will result in service consequences for users including:

- **Safety concerns:** Aging infrastructure may experience sudden failures, leading to service disruptions or safety hazards. Critical safety-related tasks may be delayed. Faults like broken footpaths and kerbs will pose safety risks.

- **Service disruption:** Inadequate funding will lead to service disruptions or reduced service quality.

Risk trade-offs

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. These risk consequences include:

- **Deferred maintenance works:** Funding limitations will continue to impact timely repairs and maintenance, resulting in prolonged use of deteriorating assets.
- **Emergency failures:** Sudden infrastructure failures may occur if critical components are not adequately maintained.
- **Quality compromises:** Reduced funding will lead to compromises in work quality.
- **Backlog accumulation:** The existing backlog may worsen if cost constraints persist.
- **Continued asset deterioration:** Asset deterioration rates will increase.

Lifecycle Management Plan

The lifecycle management plan details how Auckland Transport might operate, maintain and renew assets to ensure an asset integrity in its support of delivering service levels to ratepayers and asset users.

Most of these asset-related lifecycle management activities are undertaken by Auckland Transport through various contractual agreements with maintenance contractors and consultants. Examples of these activities are tabled as follows.

Table 22: Operations and Maintenance (OPEX) asset lifecycle management activities

Asset portfolio/ class	Asset lifecycle management activities
Transport Network	
All asset classes	Routine asset inspections and condition monitoring.
Roads	Pothole repairs, street sweeping, line marking refresh, signage cleaning and repair, surface cleaning (e.g., removing debris and spills) etc.
Footpaths	Crack sealing, debris and litter removal, surface cleaning, weed control, replacement of broken or uneven slabs
Cycleways	Surface repairs (e.g., filling cracks and potholes), line marking maintenance, vegetation control along edges, clearing debris (e.g., leaves, branches), routine safety inspections etc.
Street lighting	Replacing bulbs and fittings, cleaning light covers, electrical checks and minor repairs, pole painting and corrosion protection, adjusting light angles and heights etc.
Road furniture (e.g., benches, bollards, rubbish bins etc.)	Graffiti removal, repairs and replacements of damaged furniture, repainting or varnishing, routine cleaning, fastening loose components etc.
Stormwater	Gully and drain cleaning, clearing blockages in stormwater pipes, regular inspection and maintenance of catch pits and manholes, erosion control and minor repairs in stormwater channels, cleaning stormwater ponds and swales etc.
Transport Structures	

Table 23: Renewal (CAPEX) asset lifecycle management activities

Asset portfolio/ class	Asset lifecycle management activities
Transport Network	
Roads	Full resurfacing or resealing, reconstruction of road sections, replacement of road base layers, complete overhaul of traffic signals, reconstruction of intersections or roundabouts etc.
Footpaths	Full replacement of footpath sections, regrading and resurfacing to improve drainage, upgrading materials (e.g., from asphalt to concrete slabs), widening footpaths for improved accessibility etc.
Cycleways	Resurfacing entire cycleway sections, widening cycle paths, upgrading materials for better durability, installing new protective barriers or bollards etc.
Street lighting	Replacement of light poles and infrastructure, upgrading lighting to energy-efficient led systems, replacing wiring and underground cables, installation of smart lighting systems etc.

Asset portfolio/ class	Asset lifecycle management activities
Road furniture	Complete replacement of old or outdated furniture, upgrading to modern, more durable materials, installation of new seating, bins, and bollards in high-traffic areas etc.
Stormwater	Replacement of aging stormwater pipes and culverts, upgrading stormwater systems to handle increased capacity, installing new stormwater treatment devices (e.g., filters, separators), rebuilding stormwater detention ponds and channels

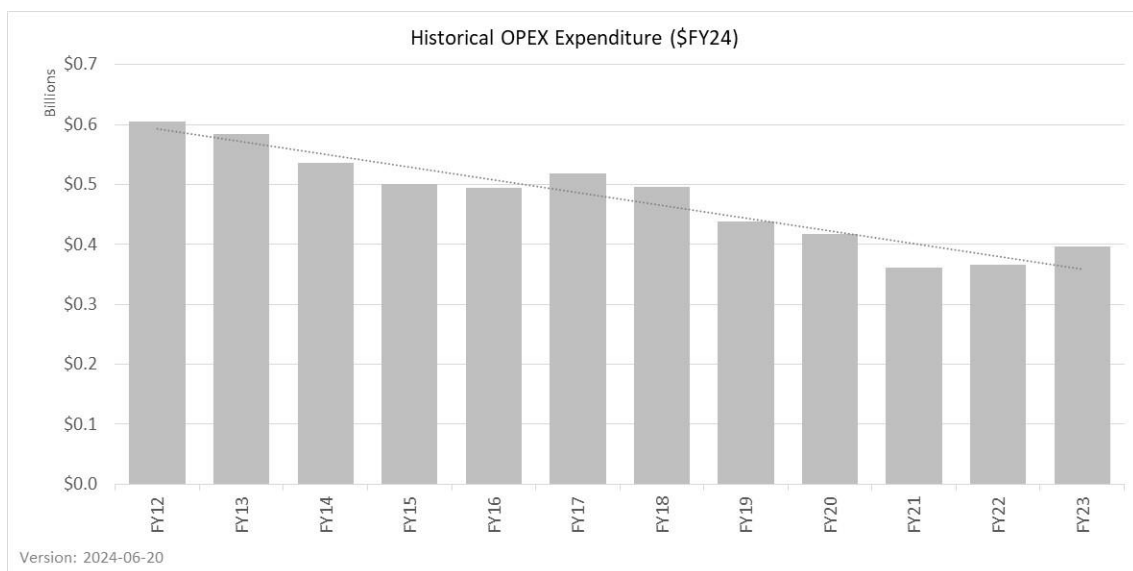
Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility costs.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

The trend in maintenance budgets is shown as follows.

Figure 40: Historical OPEX expenditure



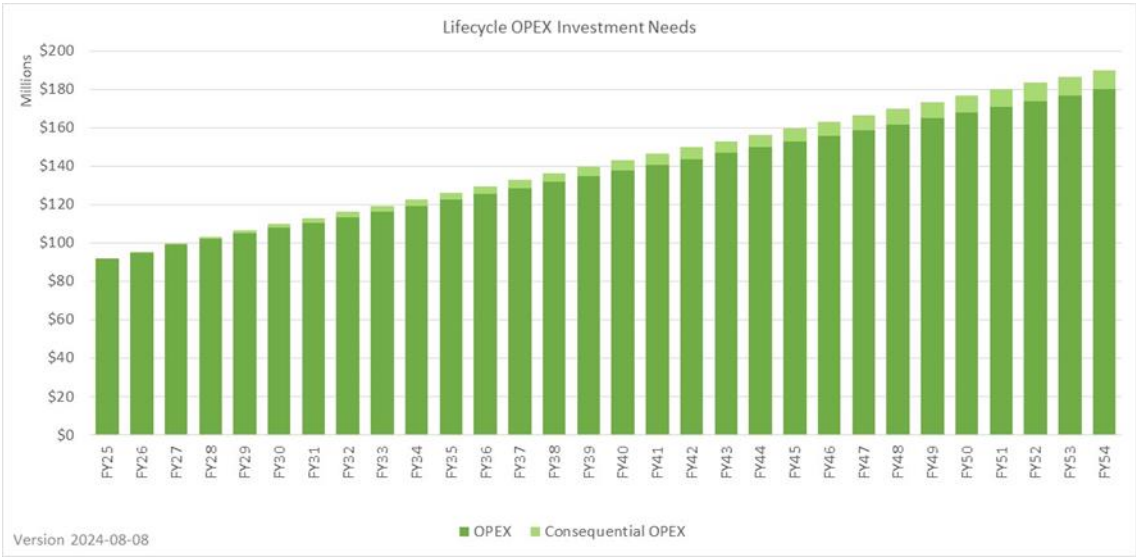
Operations and maintenance budget levels were inadequate to meet projected service levels, which may be less than or equal to current service levels. Operations and maintenance budget levels have shown to be inadequate as budget and resourcing levels have not been sufficient to carry out regular inspections on streetlights, traffic signals, road furniture and signage assets. Additionally, the current level of street sweeping as been shown to be inadequate from the results of the Auckland Anniversary and Cyclone Gabrielle flooding events in 2023. Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in this AMP and service risks considered in the Infrastructure Risk Management Plan.

Reactive maintenance is carried out in accordance with response levels of service detailed in the Road corridor maintenance contract – Volume 5 Technical Specification Section 1 General Requirements.

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease. The figure below shows the forecast operations and maintenance costs relative to the proposed operations and maintenance planned budget.

Figure 41: Transport Networks OPEX Lifecycle Investment Needs



The operations and maintenance investment needs are primarily based on historical actual spend with increases in the budget to allow for an additionally street sweeping and cleaning of AT’s stormwater infrastructure. Additionally, the investment needs allow for an increase in the number of unsealed road crews available to do both reactive and proactive maintenance of rural unsealed roads.

The investment needs allow for an increase in the operational budget to carried out necessary routine condition inspections on ATs streetlight, traffic signals, road furniture and signage infrastructure which is currently not being carried out due to budget constraints and lack of resource.

The investment needs allow for an increase in operations and maintenance spend each year due to new assets for capital projects undertaken by Auckland Transport and a 2% compounding growth factor to account for vested assets from Auckland Council or other parties. This is a high-level estimate based on the current value of AT infrastructure and ATs current operational spent. The need assumes the ratio of operation need to infrastructure value will remain constant with the addition of new infrastructure.

Renewal Plan

Renewal is major Capital work (CAPEX), major upgrades, which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces, or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The Renewal forecast in this AMP were based on the on a mixture of condition based forecasting and current depreciation modelling or historical spend, depending on the quality of the asset data. The pavement and pathways asset classes are deemed to have good quality data to forecast renewals based on condition data. Stormwater kerb and channel assets have good quality data; however, renewals of kerb and channel are usually associated with pavement renewals, so they are forecasted by historical spend. All other infrastructure does not have sufficient data quality and has been forecast based on the current financial depreciation rate.

Renewal ranking criteria

AT's transport networks infrastructure renewals are prioritised based on condition of the asset and then the importance of that asset to the overall network. Assets that are in Very Poor condition are programmed for renewals work in year 1 or 2 on programme and assets in Poor condition are programming in years 2 to 5 of the programme. Additionally, renewals budget is prioritised for assets that are deemed to be more important to the network. The importance of an asset is determined by a step assessment using the following criteria:

- First Assessment
 - ORNC,
 - Lifeline routes, and
 - Essential services.
- Second Assessment
 - The regional freight network, and
 - Traffic volumes.

Further information on how to determine the importance category of an asset can be read in ATs Network Importance Framework document.

Table 24: Condition Vs Importance Matrix for linear assets (km)

Importance	Very good	Good	Moderate	Poor	Very poor	Unknown
Vital	817	478	122	61	54	11
Major	1,296	596	182	83	78	21
Significant	2,163	1,230	393	135	97	46
Local	3,062	1,580	752	226	110	110
Minor	9,152	4,656	2,192	600	297	415
To be assessed	2,026	534	113	37	32	665
Total	18515	9074	3754	1142	668	1267
% Condition of Total	54%	26%	11%	3%	2%	4%

Table shows the quantity in kilometres of the pavement base and surface, pathways and storm water channel assets described by the condition and importance to the transport network.

Table 25: Condition Vs Importance Matrix for point assets (count)

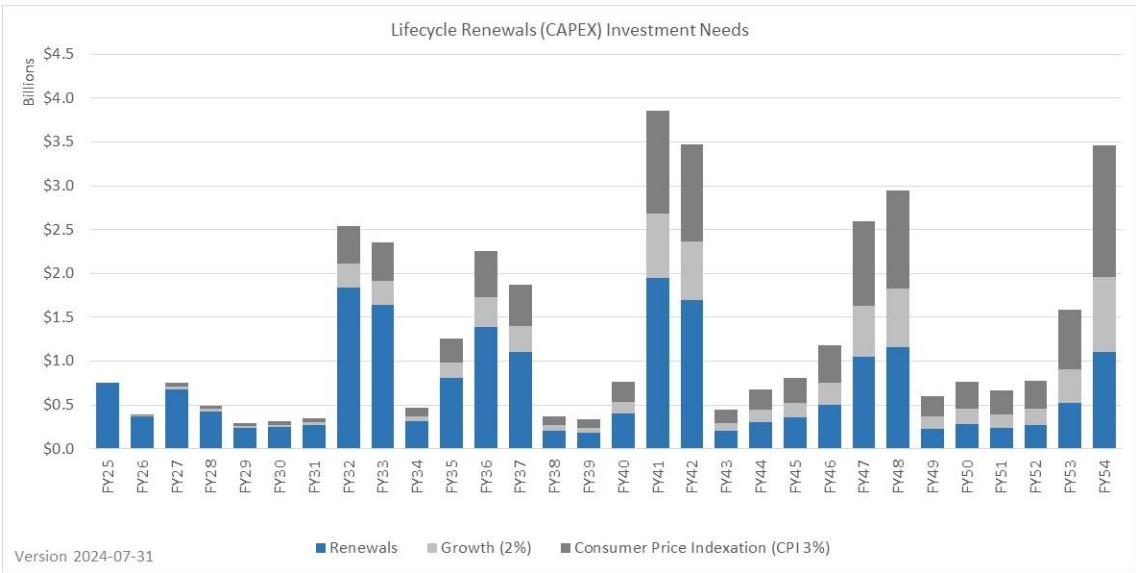
Importance	Very good	Good	Moderate	Poor	Very poor	Unknown
Vital	9,954	9,524	12,074	517	188	5,330
Major	7,935	8,030	11,415	561	162	5,339
Significant	8,577	9,174	17,005	709	219	8,176
Local	5,634	6,108	14,277	469	158	7,014
Minor	17,866	17,293	48,784	1,260	448	23,906
To be assessed	22,404	8,042	11,084	306	155	5,004
Total	72370	58171	114639	3822	1330	54769
% Condition of Total	24%	19%	38%	1%	0%	18%

Table shows the count of the catchpit, manhole, soak hole, traffic signal and streetlight pole assets described by the condition and importance to the transport network.

Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4.1. A detailed summary of the forecast renewal costs is shown in Appendix X.

Figure 42: Transport Networks Renewal (CAPEX) Lifecycle Investment Needs



The renewals investment needs shows that a considerable investment in the transport networks infrastructure in 2024/25 financial required based on a lack of investment over the past 6 years across the transport network. If this need is addressed AT will see a slight reduction in need until FY32.

Based on the condition profiles and deterioration curves a significant investment will be need in pavement bases in the financial years 2032/33 and 2033/34 which accounts for the majority of the investment need.

An additionally 2% compounding growth factor to account for vested assets from Auckland Council or other parties on the renewal budget each year stating from the financial year 2025/26

Financial Plan

Through Auckland Transport's Regional Land Transport Planning (RLTP) process, the organisation's Budgets are set for the next three years, and broadly fixed for 10-years. This process is done with collaboration with Auckland Council, to ensure alignment with the Council's Long-Term Plan (LTP).

In setting these RLTP Budgets it is assumed the Auckland Transport's RLTP team and Corporate Finance teams take into consideration the asset management related lifecycle Investment Needs and the organisation's ability to deliver the CAPEX and OPEX work going forward.

The asset management lifecycle Investment Needs forecasts what is needed to ensure the integrity of Auckland Transport's infrastructure is maintain, so those assets can best support the delivery of service levels to ratepayers and asset users.

Transport Networks

Operations and Maintenance (OPEX) Budgets

The following graph and table compare the 2024 RLTP OPEX budgets for Transport Networks, to the asset portfolio's asset lifecycle Investment Needs.

Figure 43: Transport Networks 2024 RLTP OPEX budget vs Lifecycle Investment Needs

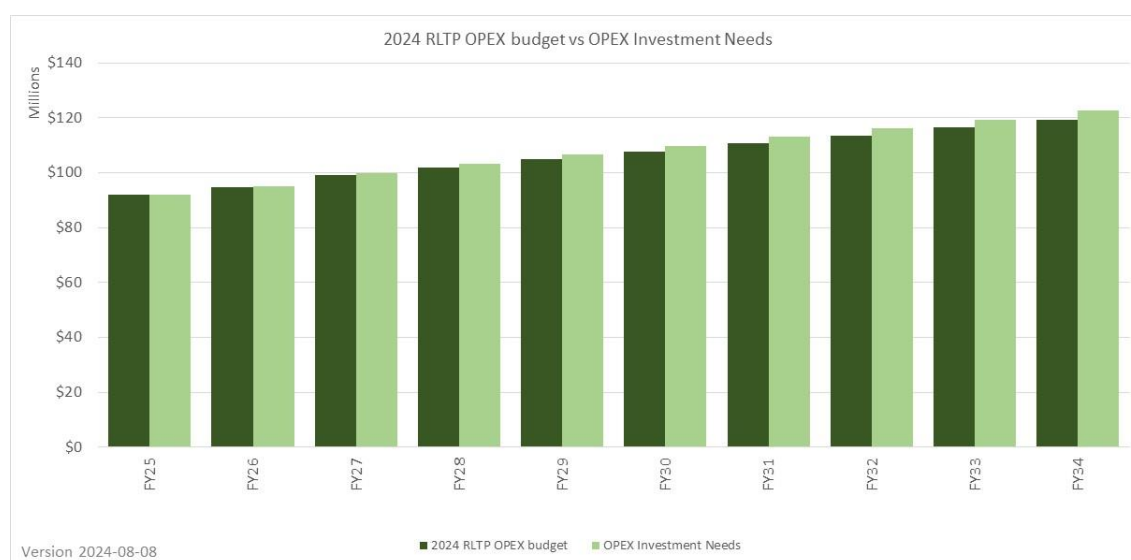


Table 26: 2024 RLTP OPEX budgets vs. Lifecycle Investment Needs

	3-year period (FY25-FY27)	10-year period (FY25-FY34)
2024 RLTP budget	\$286.13 million	\$1.06 billion
Lifecycle Investment Needs	\$287.26 million	\$1.08 billion
Funding consequence	-\$1.13 million [shortfall]	-\$20 million [shortfall]

The current RLTP OPEX budget is insufficient to meet Investment Needs, which may therefore impact current service levels. Where current budget allocations result in lesser service levels, the service consequences and risks have been identified and are highlighted in this plan, as considered in the Infrastructure Risk Management Plan.

Renewal (CAPEX) Budgets

The following graph and table compare 2024 RLTP Renewal (CAPEX) budgets to these Investment Needs.

Figure 44: 2024 RLTP (CAPEX) Renewal budget vs Lifecycle Investment Needs

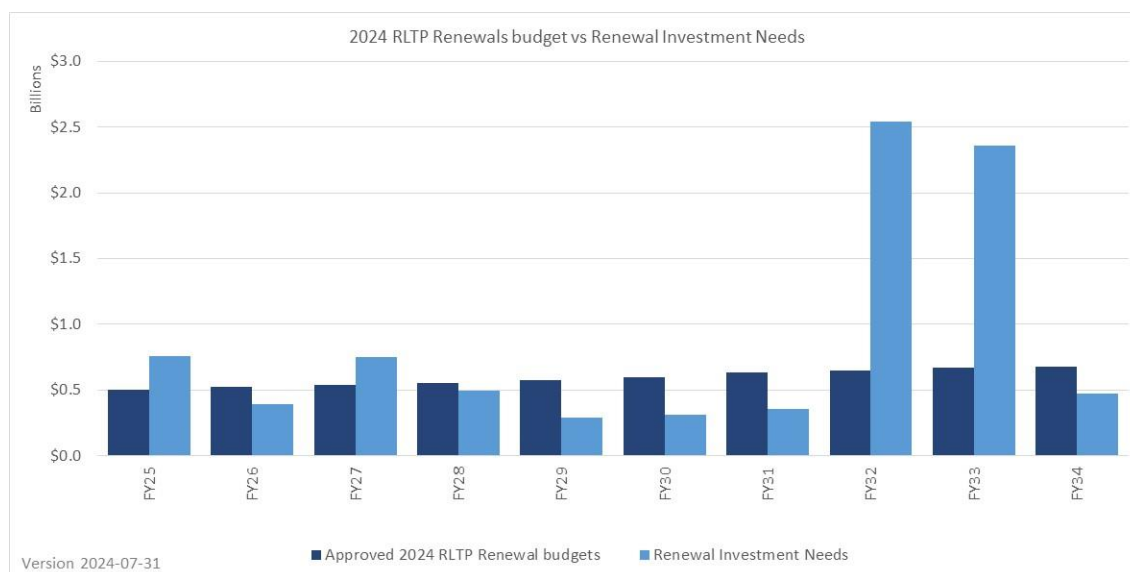


Table 27: 2024 RLTP Renewal (CAPEX) budgets vs. Lifecycle Investment Needs

	3-year period (FY25-FY27)	10-year period (FY25-FY34)
2024 RLTP budget	\$1.10 billion	\$4.81 billion
Lifecycle Investment Needs	\$1.90 billion	\$8.71 billion
Funding consequence	-\$802.47 million [shortfall]	-\$3.90 billion [shortfall]

The current RLTP Renewal (CAPEX) budget is insufficient to meet Investment Needs, which may therefore impact the integrity of Auckland Transport’s infrastructure and likely current service levels. Where current budget allocations result in lesser service levels, the service consequences and risks have been identified and are highlighted in this plan, as considered in the Infrastructure Risk Management Plan.

Depreciation is calculated and collected via property rates, primarily to fund asset lifecycle Renewal activities. The following graph presents the current RLTP Renewal (CAPEX) budget to Depreciation comparison for the Transport Networks asset portfolio.

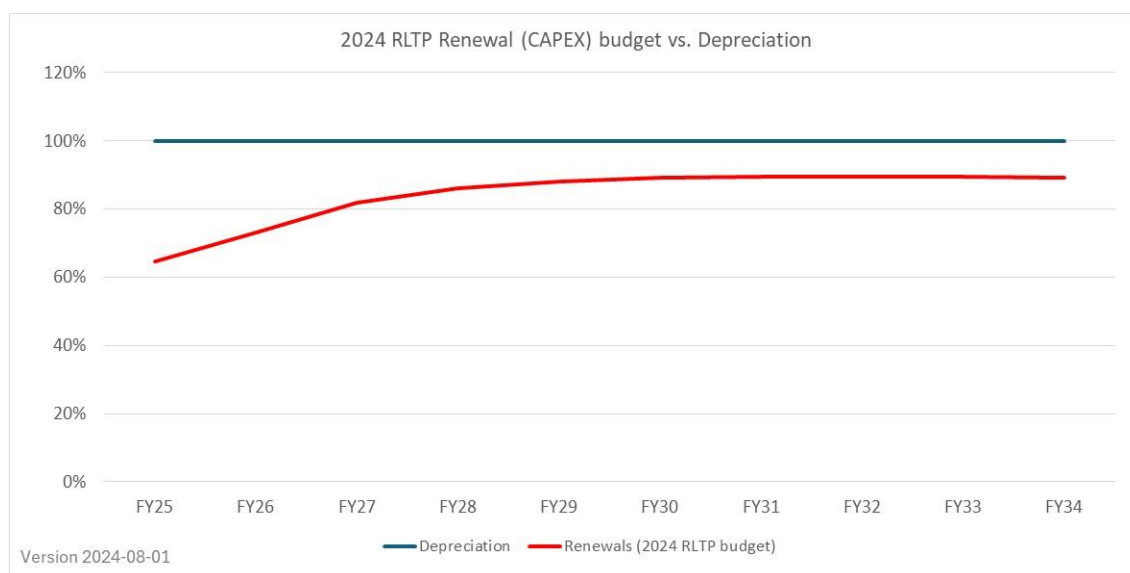
There are several risks of not funding depreciation, including:

- **Underfunded asset replacement:** Without funding depreciation, Auckland Transport may not accumulate sufficient reserves to replace or renew infrastructure assets as they age. This can lead to the deterioration of critical assets, ultimately resulting in higher maintenance costs and the potential for asset failures.
- **Service disruption:** If essential assets are not replaced or maintained due to a lack of funds, there can be significant service level disruptions. For example, failing roads in disrepair could lead to public safety issues and reduced quality of life for residents.
- **Loss of credibility and trust:** Ratepayers and asset users expect Auckland Transport to manage assets responsibly. If failing to plan for asset replacement through funding

depreciation, this can erode public trust and confidence in Auckland Transport's financial management and long-term planning abilities.

- **Budgeting challenges:** Without a depreciation funding mechanism, Auckland Transport may face unpredictable financial demands, making it difficult to manage budgets effectively. This lack of financial planning can lead to fiscal instability, where organisations struggle to allocate resources efficiently and may have to make reactive rather than proactive decisions.
- **Increased borrowing and debt:** When it comes time to replace or renew assets, Auckland Transport may need to rely heavily on borrowing if depreciation has not been funded. This can increase debt levels, leading to higher interest costs and financial strain on future budgets. Ratepayers could face sudden and significant rate increases to cover these costs.
- **Intergenerational inequity:** Not funding depreciation shifts the financial burden of asset replacement onto future generations. Today's ratepayers benefit from the use of the assets but do not contribute to their eventual replacement, leaving future ratepayers to cover the costs. This creates an imbalance where future generations are unfairly burdened with paying for assets they did not fully benefit from.

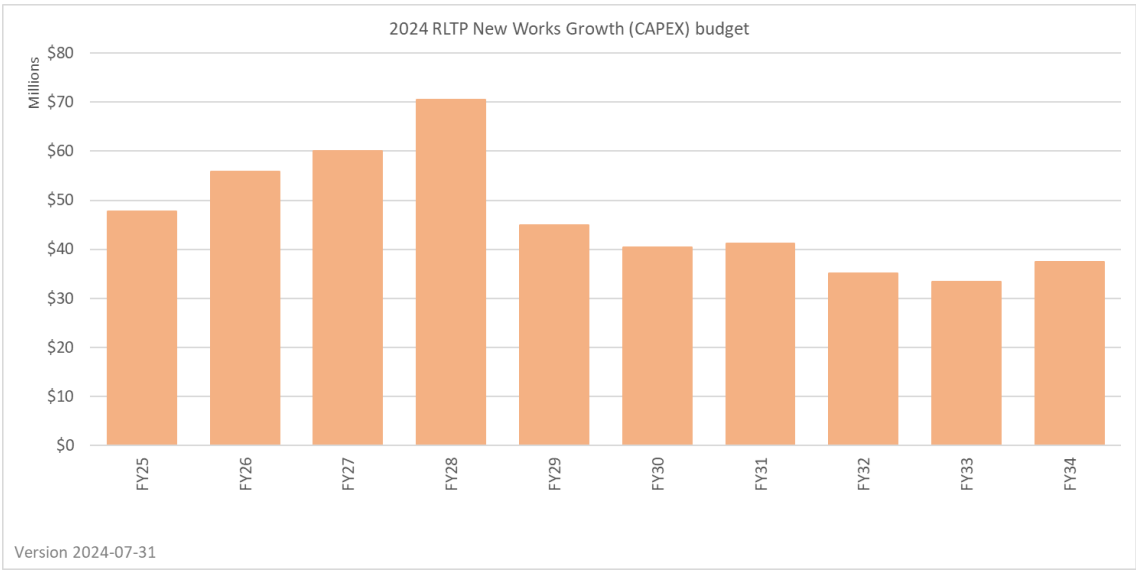
Figure 45: 2024 RLTP Renewal (CAPEX) budget vs Depreciation



New Works Growth (CAPEX) budgets

Auckland Transport's RLTP team, in collaboration with Corporate Finance, have agreed the following New Works Growth budgets. Given the underlying Capital projects and programmes will be installing new infrastructure, Auckland Transport must be prepared to fund the future operations and maintenance costs, as well as accounting for the future depreciation when reviewing long-term sustainability.

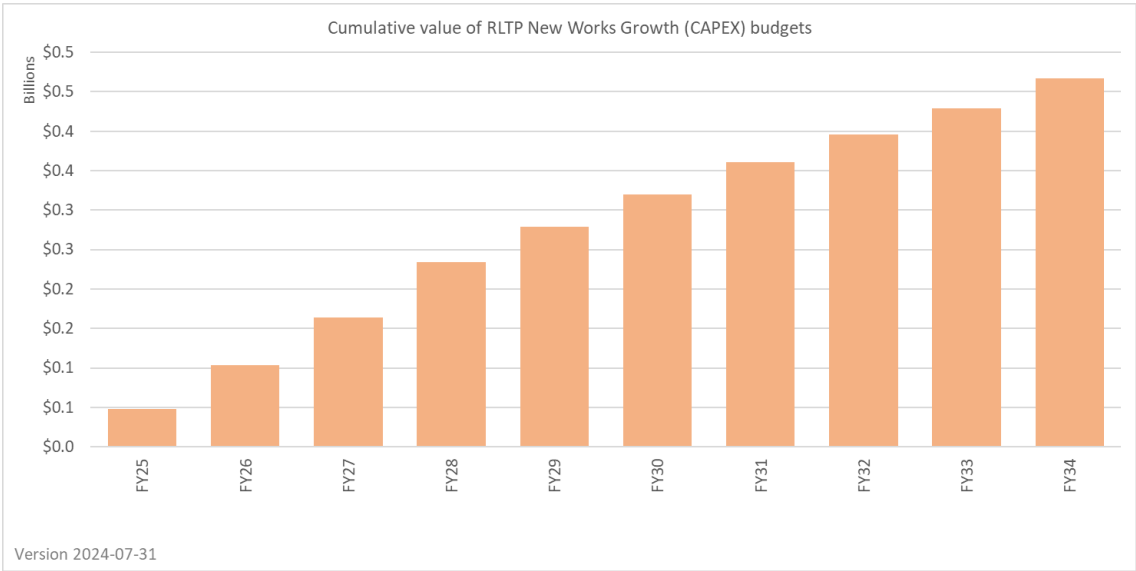
Figure 46: 2024 RLTP New Works (CAPEX) budget



The important asset management aspect of these budgets is having visibility of the quantum of new assets going into service so those consequential costs can be modelled and forecasted. The Consequential OPEX forecasts have been based on these figures.

In committing to new assets, when reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by Auckland Transport. The cumulative value of all New Works Growth acquisition works, including assets that are constructed and contributed are as follows.

Figure 47: Cumulative value of RLTP New Works Growth budgets



Service Level Improvement (CAPEX) budgets

Another aspect of the RLTP CAPEX budgets this Service Level Improvements. The underlying Capital projects and programmes within this budget are focused on working on Auckland Transport’s existing asset portfolios to uplift the service levels being provided. A real example here is uplifting an asset’s integrity to cater for predicted climate change impacts.

Again, Auckland Transport’s RLTP team have agreed this budget in collaboration with Corporate Finance.

Figure 48: 2024 RLTP Service Level Improvement (CAPEX) budget

