2024 Asset Management Plan

Greater Wellington
Te Pane Matua Taiao

metlink

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List of abbreviations

AMP	Asset Management Plan
BRT	Buses Replacing Trains
Capex	Capital expenses
CBD	Central Business District
CCTO	Council Controlled Trading Organisation
CCTV	Closed Circuit Television
CPTED	Crime Prevention Through Environmental Design
DMU	Diesel Multiple Unit
DEMU	Diesel/Electric Multiple Unit
ECTS	European Train Control System
EMU	Electric Multiple Unit
ERP	Enterprise Resource Planning System
EV	Electric Vehicle
FRACAS	Failure Reporting, Analysis, and Corrective Action System
GPS	Government Policy Statement on Land Transport 2021
GHG	Green House Gas
GWRC	Greater Wellington Regional Council
FRAC	GWRC's Finance, Risk and Assurance Committee
GWRL	GWRC Rail Limited
HVAC	Heating Ventilating and Air Conditioning
IS	Infrastructure Strategy
KPIs	Key Performance Indicators
LGA	Local Government Act 2002
LOS	Level of Service
LTMA	Land Transport Management Act 2003
LTP	Long Term Plan
MaaS	Mobility as a Service

MDC	Masterton District Council
MDBI	Material Damage Business Interruption insurance policy
MDRF	Material Damage Reserve Fund insurance policy
MDBF	Mean Distance between Failures
MoT	Ministry of Transport
MVOS	Minimum Vehicle Operating Standard
MROM	Metropolitan Rail Operating Model
NBS	National Building Standard
NLTF	National Land Transport Fund
Opex	Operating Expenses
PCC	Porirua City Council
PID	Passenger Information Display
PTA	Public Transport Authority
PTOM	Public Transport Operating Model
RLTP	Regional Land Transport Plan
RMA	Resource Management Act 1991
RMC	Rail Monitoring Centre
RNIP	Rail Network Investment Programme
RPTP	Wellington Regional Public Transport Plan
RRP	Wellington Regional Rail Plan
RUB	Requirements for Urban Buses in New Zealand
RSS	Rail Safety System
RTI	Real Time Information
RTRT	Wellington Regional Transport Response Team
SE	Suburban express
SPAD	Signal Passed At Danger
SPTF	Sustainable Public Transport Framework
SW	Suburban Wairarapa
TA	Territorial Authority

Transdev	Transdev Wellington Ltd
TSR	Temporary Speed Restriction
VKT	Vehicle Kilometres Travelled
VQS	Vehicle Quality Standards
Waka Kotahi NZTA	Waka Kotahi New Zealand Transport Agency
WCC	Wellington City Council
WCCL	Wellington Cable Car Limited
WoF	Warrant of Fitness
WNA	Wellington Network Agreement
WNMP	Wellington Network Management Plan
WRGF	Wellington Regional Growth Framework
WRMSP	Wellington Regional Mode Shift Plan

Introduction

Effective public transport connects people to work, school, recreation, and to their friends and family. This Asset Management Plan (AMP) describes how we are building an efficient, accessible, and low carbon public transport network for the Wellington region. Our multi-modal public transport network of trains, buses, and ferries provides our communities with effective travel options to access jobs, education, healthcare, cultural activities, shops, friends, and whanau. It improves the liveability and economic productivity of our region by:

- decreasing traffic congestion, particularly in the morning and afternoon peak periods, which in turn affects journey times, and journey-time reliability
- providing transport choices, including during off-peak periods
- contributing to the reduction of carbon emissions from transport
- enabling efficient land use and development of a compact, well-designed, and sustainable environment.

Our climate is changing, technology is evolving, congestion is growing. The plans in this AMP set out our response to the public transport challenges our region faces. We have made extensive improvements to our network to deliver affordable, faster, more frequent, and reliable services. We have a great opportunity to further enhance the liveability of our region through creating a more sustainable, accessible, and reliable public transport network. We will continue to invest to improve network resilience and to unlock capacity to facilitate a move from private vehicle to public transport and meet both current and future demand.

To this end, the key challenges that we address in this AMP are:

- providing sufficient capacity to facilitate a move from private vehicle to public transport and meet demand expectations
- meeting customer levels of service expectations
- efficiently delivering our extensive low carbon work programme.

Purpose

Delivering a world-class public transport network that is fit for purpose for now and in the future requires ongoing investment. The purpose of this AMP is to communicate our 30-year investment plans for the prudent management of our public transport network for the period 1July 2024 to 30 June 2054. It demonstrates the alignment from our organisational and public transport objectives through to the levels of service, our service providers, the condition of our assets, and the consequent forecast programme of works.

The investment plans contained within this AMP promote efficiency, inclusive access to public transport for all, facilitate a move from private vehicle to public transport, resilience, and security by minimising and managing the risks to our network from natural and human-made hazards and contributing to the transition of New Zealand to a net zero carbon emissions' nation.

Scope

This AMP is also the AMP for Greater Wellington Regional Council's (GWRC) subsidiary company GWRC Rail Limited (GWRL). GWRL owns a significant number of the rail assets contained within this AMP.

Our public transport services are delivered through a combination of service contracts that we fund and manage, and assets which we own or manage. The assets that we own are contained within four asset classes:

- rail station infrastructure. Apart from Wellington Railway station, we own all the station buildings, overbridges, subways, lighting, fences, bike racks, and other minor rail station infrastructure in the region.
- rail rolling stock
- bus and ferry infrastructure
- customer information assets.

The service contracts (relevant to our public transport asset management) that we fund and/or manage with our service providers are:

- bus operations
- ferry operations
- rail track access agreement.

We have a long-term access agreement with KiwiRail, the owner of the rail network. The assets and activities relating to the rail network, and those related to the rail, bus, and ferry services have been included within this AMP for completeness.

All expenditure presented in this document is on a nominal basis in FY 2023 dollars. Expenditure is shown by June financial year. For example, FY 2024/25 refers to the year 1 July 2024 to 30 June 2025.

The expenditure in this AMP covers asset renewal capex, asset improvement capex, asset opex, key asset leases, asset insurance, asset maintenance, and the annual opex payment to operators under the PTOM contract model for fleet and depot provision. We have not included:

- departmental costs
- national ticketing systems
- Snapper
- our back-office IT systems that support our customer information assets.

Status

The work programme and corresponding expenditure is based on identified needs and is derived from the expenditure in GWRC's 2024-2034 Long Term Plan (LTP) and Regional Public Transport Plan (RPTP). At the time of writing this AMP, we have not received clarity on funding from the National Land Transport Fund (NLTF). If the funding from the NLTF changes from that allowed for in the LTP, the investment plans presented within this AMP will be reviewed and re-prioritised.

We are working hard to build an efficient, accessible, and low carbon public transport network. Since the publication of our 2022 AMP, we have achieved a great deal. This includes:

Increased shelter provision at Waikanae, Porirua, Paremata, and Kenepuru rail stations	Investment in asset management maturity of our data and technical systems and people capability
Rollout of our cloud-based data warehousing and business intelligence analytical tools	30% improvement in reliability across the rail rolling stock fleet from previous year.
Completed the roll out of the On-Board Bus Announcement system.	Significantly improved rail station shelters through upgrades at Plimmerton, Porirua, Kenepuru, Linden, Paremata, Petone, , Waterloo, Pomare, Wingate, and Awarua Street stations
Completion of mid-life refurbishment of the Wairarapa rail rolling stock fleet	Bunny Street, Lower Hutt bus stop redevelopment and replacement of bus shelters
Subway seismic and cosmetic upgrades at Naenae, Epuni, Mana, Ngauranga, and Petone rail stations	Commenced the Lower North Island Rail Integrated Mobility project to replace the carriages on Wairarapa and Manawatu lines and upgrade relevant infrastructure following Crown funding approval

Commencement of our RTI replacement	Renewal of 34 standard bus shelters
Addition of16 EV buses added to our network	Installation of 13 new standard bus shelters
Reduction of C02 on majority of busses	Creating shelter condition standards
Vehicle condition audits on 10% of operator fleets	Condition assessing all GW bus shelters across the region
New bus driver only toilets designed, and installation has begun	Days Bay Wharf – Ferry shelter concept design underway
New Bike and Ride shelters at Masterton, Solway and Carterton stations	Johnsonville Stop D – for construction design
Lambton Interchange refurbishment completed	Living roof shelter installed at Victoria University
Paraparaumu bus hub upgrade	Reduction in emissions on the Golden Mile
Investment in asset management maturity of our data and technical systems and people capability	Significantly upgraded our Open Data Platform

AMP document structure

This AMP is structured into nine sections as outlined in Figure 1.

Introduction
Expenditure Summary
Our Operating Environment
Metlink: Who we are
Our Levels of Service
Demand and Growth
Risk Management
Our Asset Management Approach
Our Asset Class Plans

Figure 1: AMP document structure

Expenditure Summary

Expenditure Summary

The expenditure described in this AMP is an investment in our vision of an efficient, accessible, and low carbon public transport network. Our 30-year plan is based on assumptions about the impact of population and demographic changes, the economy, climate change and natural hazards, technology, and legislative and governance changes, on our public transport network.

Our key initiatives and investment plans support our strategic priorities to increase the attractiveness of public transport relative to driving, reduce public transport emissions by decarbonising the fleet, continue to improve passenger experience across all aspects of our network, and maintain and improve access to public transport for all. These are discussed further below.

Promoting and encouraging people to move from private vehicles to public transport

The forecast activities and expenditure in this AMP promote and encourage a move from private vehicle to public transport by:

- providing a high quality, high capacity, high frequency core network
- maintaining and improving access to public transport for all
- providing greater choice and flexibility for journey planning, fares, and fare payment options
- promote behaviour change
- provide a consistent and quality customer experience.

Improving passenger experience across all aspects of our network

Our work to improve passenger experience encompasses:

- providing a fit-for-purpose vehicle fleet
- delivering quality core infrastructure that meets ongoing demand
- improving the quality and accessibility of public transport
- prioritising the safety and maintenance of our public transport network.

Maintaining and improving access to public transport for all

We are committed to maintaining and improving access to public transport for all. Our Accessibility Charter was our first step towards making our public transport network accessible for all. Our Accessibility Action Plan sets the way forward to realising our vision of an inclusive public transport network for all.

The plans within this AMP ensure we can provide accessibility features in all vehicles, facilities, and services that provide access equal to that of people without disabilities.

For example, wheelchair-accessible access to trains, and super-low floor buses, and the use of accessibility and safety standards in the design and development of new facilities and services.

Reducing public transport emissions by decarbonising the vehicle fleet

Our public transport network is a key contributor to reducing greenhouse gas emissions by moving people out of private vehicles to public transport. A move to a zero emission public transport fleet and the development of a more efficient and reliable public transport network will help achieve GWRC's sustainability goals and contribute to the reduction in carbon emissions from transport.

Modernisation and decarbonisation our public transport fleet is a key contributor to reducing GWRC's carbon footprint. This leads to more efficient journey times and improved customer experience, which will encourage a move from private vehicle to public transport. This will result in a decrease in overall carbon emissions and pollutants for the region.

We are developing a Zero Emission Buses (ZEB) Transition Roadmap to introduce zero emission buses in the most cost effective and efficient manner. The key principles of the roadmap are value for money, efficient utilisation of resources (depots, charging infrastructure, existing fleet), meeting carbon goals, and affordability, while delivering against the following key goals:

- no new diesel buses from 2025 (this is Waka Kotahi NZTA mandated)
- zero emission buses on our core routes by 2030
- no diesel buses in the public transport fleet by 2035 (this is a Waka Kotahi NZTA target)
- GWRC carbon neutrality by 2030.

We are also exploring ways to further decarbonise our rail and ferry fleet and driving environmental and cost sustainability by pursing smart commercial opportunities and lower carbon technologies.

There are some key challenges to reducing public transport emissions that need to be overcome including:

1. **Electricity distribution network infrastructure.** In most cases, the electrical distribution infrastructure to depot locations is not capable of supplying the amount of electricity required for charging buses. In some cases, the network does not have the required resilience due to the age of the components. Therefore, major upgrades are required.

2. **Electricity generation.** New Zealand's electricity generation is largely from renewable resources. However, a portion is still generated from burning fossil

fuels. Full decarbonisation of the public transport fleet cannot be achieved until New Zealand's electricity generation is completely renewable and sustainable.

3. **Transitioning our existing assets and infrastructure.** Our existing asset base needs to be transitioned to assets which support lowering emissions. This includes not only the vehicles (train, bus, ferry) but also the infrastructure that supports them, such as bus depots and charging infrastructure. As we progressively move to replacing diesel powered buses with zero emission buses, the infrastructure challenges include:

    a) ensuring we have the necessary bus depots and charging equipment to service and accommodate an increasing electrified fleet.

    b) stronger control of critical infrastructure such as bus depots and charging equipment to ensure they remain available for public transport use.

    c) land availability.

    d) cost to implement the transition.

Uncertainty and risk

The key uncertainties and risks associated with our expenditure forecast include:

1. The capital expenditure required to implement the investment plans contained in this AMP is significant and will require contribution from regional and central government sources.

2. The possibility of ongoing cost increases for labour, contractors, resources, physical infrastructure components, and maintenance sources.

3. Exposure to natural hazards and climate related events. Much of our infrastructure assets are in areas prone to natural hazards. Climate change will increase both the frequency and magnitude of natural hazard events that already occur in the region.

4. Being highly dependent on Crown contributions to continue to operate our public transport network. Operating in a fiscally constrained environment, which requires careful prioritisation of resources. This can lead to difficult decisions about which projects or initiatives to fund and which to delay or cancel.

5. As we transition from current state to future electrification, we will be dependent on the owners of critical Public Transport assets to manage their assets to an appropriate level of risk to ensure we can continue to operate during (and after) the transition and, where that transition depends on transferring assets, that those assets remain fit-for-purpose.

Expenditure overview

The expenditure presented in this AMP is derived from the expenditure in GWRC's 2024-34 LTP and reflects our dedication to increasing the attractiveness of public transport relative to driving, reducing public transport emissions by decarbonising the fleet, improving passenger experience across all aspects of our public transport network, and maintaining and improving access to public transport for all.

The work programme and corresponding expenditure is based on identified needs and is derived from the expenditure in GWRC's Long Term Plan (LTP) and Regional Public Transport Plan (RPTP). At the time of writing this AMP, we have not received clarity on funding from the National Land Transport Fund (NLTF). If the funding from the NLTF changes from that allowed for in the LTP, the investment plans presented within this AMP will be reviewed and re-prioritised.

The total expenditure for the 30-year period is **$17.340b**. The expenditure covers asset renewal capex, asset improvement capex, transitional rail (rail network), asset opex, key asset leases, asset insurance, asset maintenance, and the annual opex payment to operators under the PTOM contract model for fleet and depot provision. We have not included:

- departmental costs
- national ticketing solution
- Snapper
- our back-office IT systems that support our customer information assets.

Over the 30-year period covered by this AMP, our total opex forecast is **$5.871b**. This comprises rates, leases, insurance, electricity maintenance, and renewal opex. The total opex forecast comprises:

- $**2.027b** for the **rail portfolio** covering **$715m** on the rail network, **$204m** on rail station infrastructure, **$13m** on rail depot, plant, and equipment; and **$1.095b** on rolling stock
- $**3.567b** for the **bus and ferry portfolio** covering **$220m** on customer facing assets, **$51m** network enabling assets, and $**3.296b** bus fleet, depot and EV charging assets
- $**278m** for our **customer insight assets**.

Our total public transport asset opex expenditure forecast by asset type is shown in Figure 2.

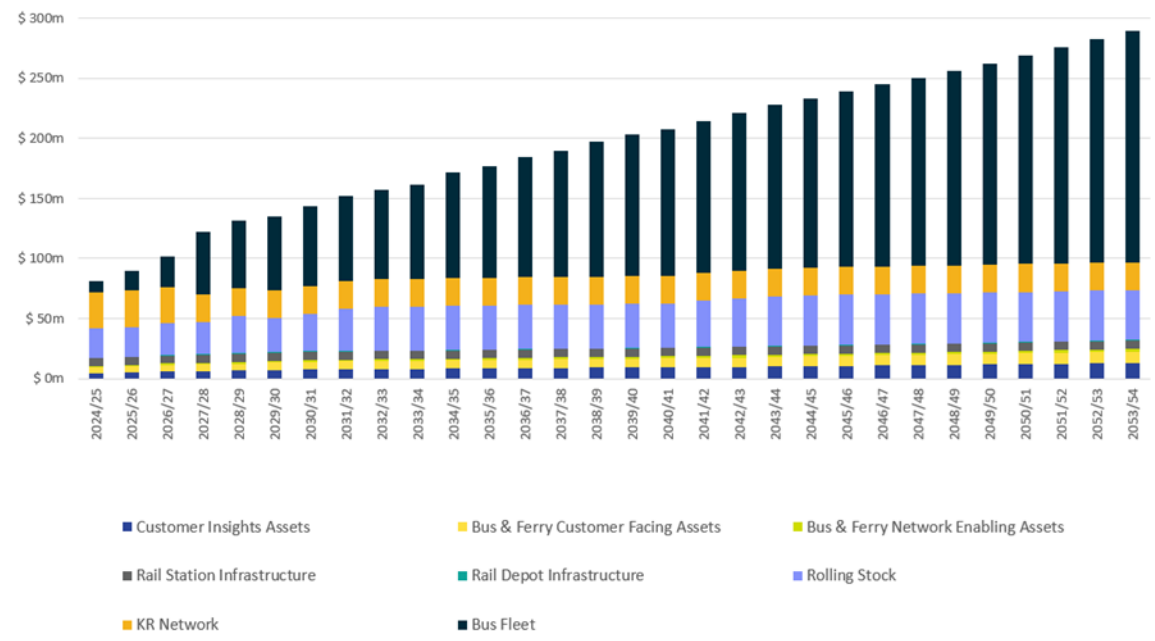


Figure 2: Public Transport asset opex forecast including maintenance

Our public transport asset opex by expenditure type is shown in Figure 3.

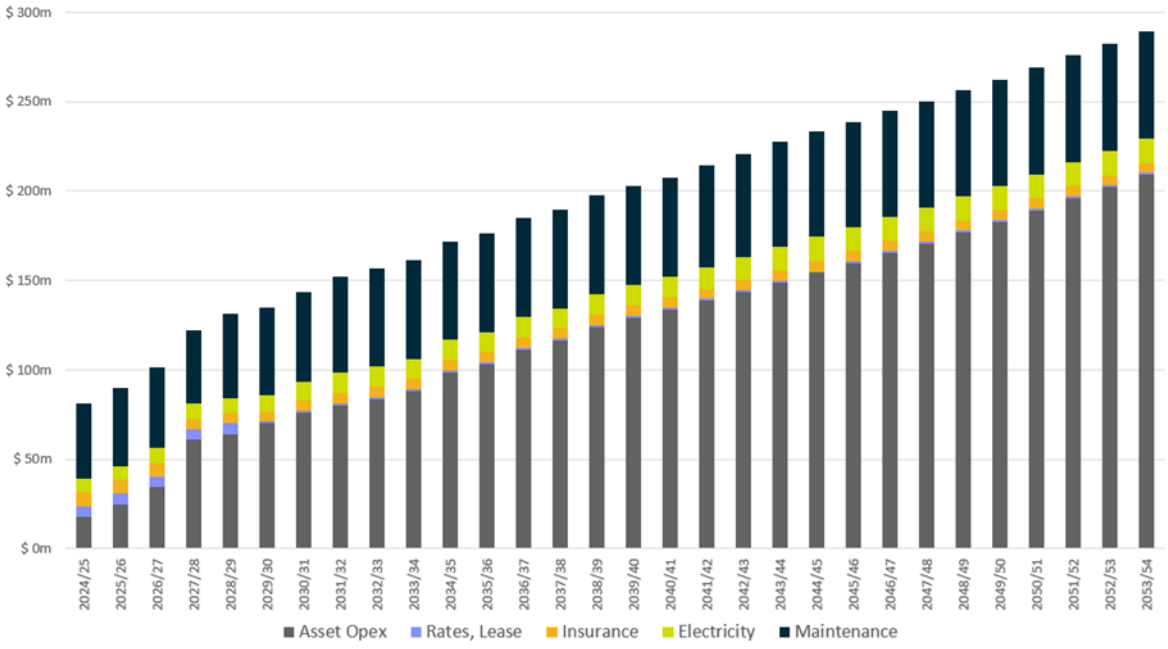


Figure 3: Public transport asset opex by expenditure type

The total capex forecast for the same period is **$11.469b**. This includes:

- **Rail capex of $10.974b,** comprising **$8.838b** on the KiwiRail Network, **$500m** on rail station infrastructure, **$139m** on rail depot, plant, and equipment; and **$1.497b** on rolling stock.
- **Bus and ferry capex** of **$292m**, comprising **$164m** on customer facing assets, **$25.83m** on network enabling assets and **$102.6m** on bus fleet, depot, and EV charging. The projected forecast is under the existing PTOM contracting model, with GWRC developing and owning a depot in the south part of the network.
- **Customer Insight Assets** of **$203m**.

Our total public transport asset capex by portfolio type is shown in Figure 4.

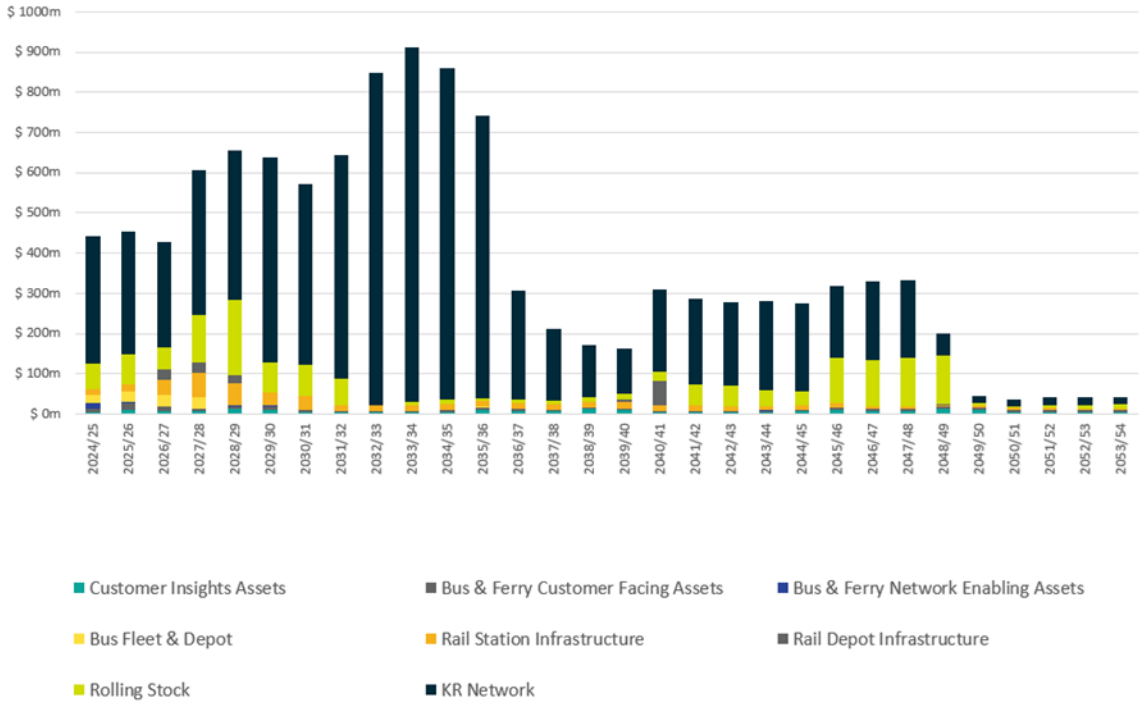


Figure 4: Public transport asset capex by asset type

Our public transport asset capex by renewal and improvements is shown in Figure 5.

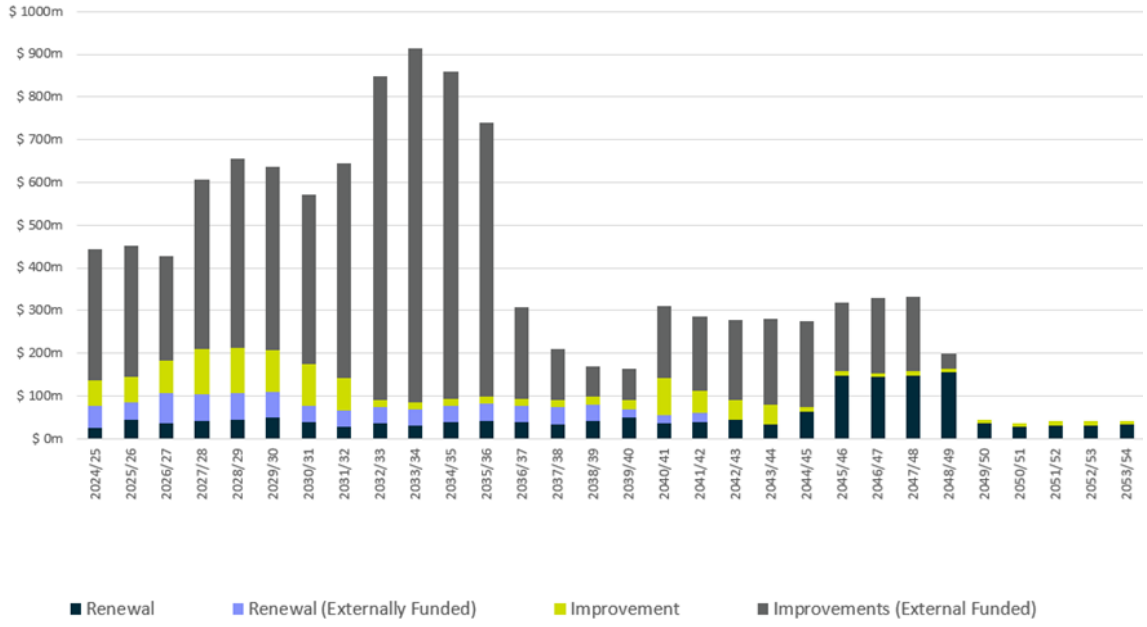


Figure 5: Public transport asset capex by renewals and improvements

Our Operating Environment

Our Operating Environment

The Wellington region of 2050 will be a very different place to live from the region of today. Our assets and infrastructures must adapt to our region's changing needs and aspirations.

The environment in which we operate is being shaped by several emerging external influences and the wider system and legislative framework within which we operate. This includes national and regional policies, strategies, plans, and societal outcomes by the governmental organisations with whom we work. As an activity of GWRC, our role, purpose, strategic aims, and the investment priorities outlined in this AMP are directed by GWRC's overall vision, purpose, and the community outcomes sought for the Wellington region. Accordingly, the factors affecting our operating environment can be characterised into three main areas:

- emerging trends, both national and regional environmental influences
- national strategic context and legislative environment
- regional Strategic context and GWRC, as our parent organisation.

These are described below.

Emerging trends and environmental influences

Long-term trends such as climate change has significant impacts on our infrastructure. Investing in our public transport network to ensure it is, and remains, fit for purpose into the future requires careful targeting of expenditure on assets and services that count towards delivering a world class service. To do this, we need a realistic view of the future to ensure we continue to provide reliable, cost effective, accessible, and safe services that meet our customers' changing needs.

In line with this, the plans contained within this AMP account for a range of trends and environmental influences that we see emerging within our operating environment. We account for these trends and influences in our planning so that we can ensure a fit for purpose and resilient public transport network for the region we serve. Key trends and influences are discussed below.

Economics

Economic conditions have fluctuated markedly over the last three years alongside responses to the COVID-19 pandemic and global conflict, particularly in Ukraine.

The New Zealand economy, like many other economies around the world, is facing multiple challenges that are contributing to an increasingly uncertain outlook. Mixed performance across economic indicators is forecasted, particularly in the short-term.

High interest rates have reduced domestic demand, and a weaker global economy has slowed the growth of New Zealand's exports. Increases in the cost of living and the associated equity challenges are expected to continue. The period of lower growth drives further slowing in the labour market, with the unemployment rate expected to increase. Treasury forecasts the economic slowdown to persist through 2024.

From 2025, interest rates are expected to fall, and growth is expected to pick up, averaging 2.8 per cent from 2026 onwards. Unemployment is also expected to trend downward from 2026.

Key challenges and opportunities

Our key challenges and opportunities are:

- ongoing cost increases are possible for labour, contractors, resources, physical infrastructure components, and maintenance services.
- balancing affordability with community needs.
- increasing unemployment. High levels of unemployment may reduce revenue limiting the funding of programs and services necessary for community well-being. Reduced demand. It is expected that there will be a notable decrease in consumer spending and business activity which will slow regional business profitability and the wider economy.
- New Zealand, as a net importer, is vulnerable to disruptions to global supply chains. If the supply chains are disrupted or international freight costs continue to increase, New Zealand will face increased costs, which will exacerbate an already constrained budget. As such, infrastructure spending will necessarily shrink as less can be done for the available budget.

The current economic climate provides an opportunity for regional businesses and industries to innovate and find new ways to operate more efficiently and effectively.

Population and demographic change

Projections show our region will continue to experience steady growth. Whilst since the GWRC 2021-31 LTP total population projections have been revised downwards over the short and medium terms, the forecast annual average growth rate of nearly 1% over the next 30 years would still result in an increase in the regional population of approximately 180,000[1]

The projections show that population growth is not expected to be evenly distributed across the region. While Wellington and Lower Hutt are forecast to experience a relatively moderate population increase, the highest growth rates are forecast in Masterton,

[1] Sense partners 2023 projections, 50th percentile forecast

Carterton, and South Wairarapa. As a result, we must plan for both population expansion within existing concentrated areas such as Wellington City and the Hutt Valley, as well as extending our services to new communities emerging in less heavily developed parts of the region. Increases in population will place pressure on our existing infrastructure and services and it will also require new infrastructure and services.

Demographic changes in the age profile are also expected. We expect to see an increasingly aging demographic, with an increase in the percentage of the population aged over 65 in all TAs including the Wairarapa and Kapiti that currently have the highest proportion of their population in this older cohort.

This increasing age cohort will require us to adapt the way we offer our current services, ensuring they are future proofed for changing demand and expectations. For example, we will need to be responsive to the mobility needs of an older population and be available beyond the traditional peak commute hours. For the younger population, we expect that they will continue to be centred in the cities, particularly in Porirua, Lower Hutt, and Wellington City.

Our Expected Growth section considers what these changes mean for developing our public transport network.

Increasing risk from environmental change and natural hazards

Our region's climate has already changed and will continue to change. Our region will continue to experience more frequent and intense rainfall events, and longer duration and more frequent drought events. The number of hot days will increase, and the number of frosts will decrease. There will be permanent sea level rise and more frequent and intense coastal flooding and erosion that cause both temporary and long-term damage.

Inland we will see more intense river flooding, and increased slips and landsides. Localised flooding can have significant impacts on communities and temporarily close transport links.

The Wellington region's landscape has been shaped by natural forces that continue to impact on the region. Its physically diverse natural environment is subject to a wide range of natural hazards including earthquakes, tsunami, landslides, river and coastal flooding, erosion, slope failure, drought, severe wind and, increasingly, wildfires.

Three major earthquake fault lines run through the region. Seismic uplift created much of the flat land around Wellington Harbour that is now the site of strategic transport infrastructure, including the Wellington Railway Station.

Steep hills, made of fracture-prone greywacke rock, lead to frequent slips that impact on transport routes into, out of and within the region. Major slips in Ngaio Gorge,

Ngauranga Gorge, Kapiti Coast, and on the Remutaka Hill Road have all impacted transport in the region.

In the last six years, there have been over 50 slips that needed rectification within the rail network. Eleven of the slips have been passed by trains or trains coming to a stop. The latest damage incident occurred on 17 August 2021. With increasing service frequency, the likelihood of a train being impacted by a slip has increased. Data also shows the likelihood of slips is increasing with more extreme climate events.

Much of our infrastructure assets are in areas prone to natural hazards. Climate change will increase both the frequency and magnitude of natural hazard events that already occur in the region. As such, climate adaption and mitigation timeframes as well as our planning timeframes need to be well understood to ensure timely planning processes well ahead of the impacts being felt.

Accordingly, our infrastructure and asset planning decisions that assume lifespans of 30-100 years need to incorporate climate change projections and natural hazards. This is particularly true for decisions that are expensive to alter or reverse. When a decision relates to a long-lived asset, having full information on climate impacts and emission costs is highly unlikely, so our planning approaches must have an adaptability to them and a built-in programme of monitoring and review, so we can incorporate new challenges and opportunities as they arise.

Making our infrastructure more resilient and investing in resilience planning will enable us to recover faster. Therefore, our investment planning for public transport reflects these trends and environmental influences by:

- increasing our focus on resilience planning in our maintenance and capital spend, throughout the asset lifecycle from design to delivery and maintenance
- ensuring resilience initiatives are appropriately prioritised in our expenditure profile and considering the future population growth
- translating climate change effects and adaptation into our infrastructure investment where possible.
- working with our partner, KiwiRail, to raise visibility of slope stability risk on the rail network. We have collectively reviewed high risk slopes on the rail network and are establishing a priority and investment plan. These high and medium risk slopes are currently in detail design phase.

Growing focus on climate change and emissions

Emissions from land transport are increasing, and with that comes a growing urgency to act on climate change and emission reductions. The ambitious emission-reduction-targets for transport, of 35% in the Wellington region, will not be able to be achieved through transport-related solutions alone; they will require a response that better

integrates land-use planning and transport. Future development in areas far from the existing public transport network will result in increasing emissions unless we make significant investment in appropriate new public transport infrastructure and/or services.

Growth patterns and plans could pose significant challenges for achieving emission-reduction targets in the region. The areas in central Wellington that offer the best public-transport and active-mode travel options have seen a lower percentage of population growth a in the past decade, 6% according to the recent census data. .

There has been a notable increase in the percentage of population growth in outer areas such as Wairarapa (councils growth ranging from 19%-24% of growth) and the Kapiti Coast (14%) and Porirua (15%) along with Upper Hutt with a similar percentage population increase over the last 10 years.

The Wellington Regional Leadership Committees (WRLC) Future Development Strategy signals where growth is expected in the region over the next 30 years 1404-GWRC-WLRC-Future-Development-STRATEGY-2024-240223-06.pdf (wrlc.org.nz).

It notes:

- our current population, whilst concentrated in some areas, is spread out across the region. Housing development expected over the next 30 years will continue this pattern.
- over the next 30 years, we expect 82% of our housing development to be in brownfield areas and 18% to be in greenfield areas

People living in outer areas are both more likely to drive to work and services than those who live in more central locations, and to travel further to work and other activities.

This trend of the percentage of population growth occurring more in outer areas and declining in central locations will, in general, make achieving emission-reduction goals very challenging. The high levels of vehicle kilometres travelled (VKT) generated by growth in these outer areas will need to be offset by a commensurate reduction in VKT from existing residents, which may be very difficult to achieve.

Focusing housing growth on locations with close access to public transport is likely to support a move from private vehicles to public transport with commensurate benefits in reduced congestion, lower carbon emissions, and reduced pollutants. In this region, these locations are largely in and around central Wellington and the inner suburbs of Wellington City, and in the immediate walking catchments of rail stations in the Hutt Valley, Porirua and key centres in Kāpiti.

The Wellington RLTP identified that a lack of public transport capacity puts at risk the achievement of a shift from private motor vehicles to more sustainable modes of travel. Even with the uncertainty relating to the ongoing impacts of changes in travel behaviours following the COVID-19 pandemic, the public transport network is likely to experience capacity constraints within the next 5 to 10 years, driven by population and economic growth.

Public transport reliability in parallel with public transport capacity is required to deliver a viable and attractive public transport system that allows people to be confident they can shift modes from private vehicles.

Technological change

Advances in technology are ongoing, rapid, and unpredictable. Technology advancement assists us in delivering value to our customers. There are raised expectations among our communities for more personalised services and more data sources in an increasingly timely and accessible manner. New products and capabilities are changing the way we can communicate with the communities we serve and will enable us to improve the services we offer.

There is opportunity to shift the way we use the data we have from merely measuring performance or reporting, towards driving business operations and planning our network. Additionally, advanced analytics leads to new insights, which mature into new data services, which in turn enable new services that we can offer.

There is high uncertainty around the nature and capabilities of the new technologies with which we will be utilising and interfacing with, and the pace at which these will be adopted. This is driven by the rapid and unpredictable pace of innovation in the technology space, the unpredictable extent of uptake by firms and consumers, and our communities' changing expectations. Keeping pace with our customers' expectations of technology will play an important role in service delivery and the retention and acquisition of customers.

The emergence of new technologies presents both challenges and opportunities for public transport. New payment systems and digital 'mobility as a service' apps are changing customers' expectations. Public transport on-demand connected and autonomous vehicles and car sharing schemes could result in significant changes to the role of public transport. Robust security, privacy, and transparency are both core principles and challenges for us.

Our assumption within this AMP is that technological change will continue, with greater advancements in two-way public engagement and communications. During the period covered by this AMP, we expect to:

- become more focussed on data driven decision making, commensurate with the availability of both the data and the technology to access and analyse the data
- progress the evolution of electronic ticketing solutions, which we consider will evolve quickly
- participate on digital platforms that people will increasingly plan and consume their travel choices (e.g. Mobility as a Service, and public transport on-demand).
- manage data as an asset
- take a modular approach to building our information systems (i.e. everything is componentised so that replacement of an aspect doesn't affect the whole system and thus we are able to continually evolve)
- embed netBI as our data warehouse and single source of truth for all decision-making information. NetBI will be enhanced over the next year to include telematics data from all operators, KPI reporting, and to manage the abatement process seamlessly. Further updates will include TA, Deprivation Indexes, Complaint Information, Revenue Protection Information, Weather Data and much more to make the data far more comprehensive). In addition, RTI 2.0 will export all data to netBI and may even extract some data from netBI for historical prediction modelling.

Legislative change, governance, and partnerships

The legislative environment in which we operate regularly changes. Legislative, statutory, and regulatory change will be ongoing and may change our role, relationships, and our ways of operating. We may also see new governance roles and responsibilities for climate change and public transport.

Land Transport Management (Regulation of Public Transport) Amendment Act 2023

A significant legislative change for this AMP is the amendments introduced into the Land Transport Management Act 2003 (LTMA) by the Land Transport Management (Regulation of Public Transport) Amendment Act 2023 (the Amendment Act). In August 2022, Cabinet agreed to replace the Public Transport Operating Model (PTOM), the regulatory environment that governs how public transport is procured and delivered.

These reforms were implemented through a combination of the development of new operational policy and legislative changes introduced through the Amendment Act. The Amendment was enacted on 30 August 2023.

The legislative changes introduced through the Amendment Act has major implications for Metlink. These include:

- the performance of public transport functions will be guided by new principles shaping the planning, procurement and provision of public transport services
- direct ownership or interests in assets and infrastructure by local authorities and in-house operation of public transport services by public transport authorities (PTAs) is now enabled
- additional transparency requirements for the planning, procurement, and operation of services – including in relation to the financial performance of operators and the aggregate terms and conditions of employees
- inter-regional public transport services will no longer be automatically exempt services and will instead be treated the same as public transport services within a region.

At the time of writing this AMP, Waka Kotahi New Zealand Transport Agency (Waka Kotahi NZTA) is currently engaging with the industry, including PTAs, to give effect to the legislative changes and support more specific reforms including the AMP-relevant focus area of supporting different asset ownership arrangements, including PTA ownership of assets.

This includes:

- public transport services support a move from private motor vehicles, by being integrated, reliable, frequent, accessible, affordable, and safe
- employment and engagement of the public transport workforce is fair and equitable, providing for a sustainable labour market and sustainable provision of public transport services
- well-used public transport services reduce the environmental and health impact of land transport, including by reducing reliance on single occupancy vehicles and by using zero emission technology
- provision of services supports value-for-money and efficiency from public transport investment while achieving the first three objectives.

Partnership

There are growing expectations around transparency, participation, and partnerships. Increasing democratisation of our work and the growing prevalence of partnership models will, while bringing funding and resourcing challenges, provide opportunity to improve the quality of our services and outcomes for our region.

The importance of working in partnership will continue to increase. More and more of our work is dependent on partnerships for delivery, whether that be fundamental partnerships with mana whenua, partnerships with territorial authorities in the region on shared delivery, partnerships with government agencies to achieve significant projects and programmes for the region or partnering with the private sector and community organisations to achieve local goals.

Partnership approaches are rewarding, and we need to ensure that our budgeting and resource allocation anticipates a slowed down, more consultative process and is responsive to the changes which may be brought about outside of our line of sight through working in partnership.

Metro Rail Operating Model (MROM)

The MROM was established in 2009. Its sets out the model on ownership and the operation of metro rail in New Zealand, and guidelines on funding structures. It has enabled close partnerships for GWRC with MoT, Waka Kotahi NZTA, KiwiRail, and community stakeholders. The current MROM model is still under review by the MoT as central and local government along with our representative communities move into a new operating environment that is more sustainable for our current and future generations.

National Strategic Context

Legislation and national transportation priorities sets the national strategic context in which we operate. These are discussed below.

Legislative environment

There are several legislative acts that guide our work. The three key pieces of legislation that set out our role in public transport (as part of GWRC) and describe and prescribe our funding arrangements are:

- **LTMA 2003** sets out the planning and funding framework that directs central government funding annually into roading, public transport and traffic safety. It also sets out the requirements for the development of the Regional Land Transport Plan and RPTP. The LTMA was significantly updated in 2008 and 2013.
- **Land Transport Management Amendment Act 2013** established the Public Transport Operating Model (PTOM). The PTOM provides a framework for public transport public-private partnership between regional councils and transport operators.
- **Land Transport Management (Regulation of Public Transport) Amendment Act 2023**. This Act replaces PTOM with SPTF and enables regional councils to operate public transport services and allows different asset ownership arrangements.

- **Local Government Act 2002** (LGA) - provides for the local authority to take accountability for meeting current and future community needs including quality infrastructure and local public services. It also sets out the requirements for the Long- Term Plan and the identification of community outcomes.

The other legislative acts that impact and influence our asset management decisions include:

- Local Government (Rating) Act 2002
- Land Transport Act 2004
- Local Government Borrowing Act 2011
- Climate Change Response (Zero Carbon) Amendment Act 2019
- Resource Management Act 1991
- Civil Defence Emergency Management Act 2002
- Health and Safety at Work Act 2015
- Railways Act 2005
- Building Act 2004.

Transportation priorities

The two key documents that provide the national strategic transportation direction and priorities are the **Government Policy Statement on Land Transport** (GPS) and **The New Zealand Rail Plan.**

GPS

The Government Policy Statement on Land Transport (GPS) sets out the Government's land transport strategy including:

- what it expects to be achieved from its investment in land transport through the National Land Transport Fund
- what it expects to be achieved from its direct investment in land transport
- how much funding will be provided and how the funding will be raised
- how it will achieve its outcomes and priorities through investment in certain areas
- a statement of the Minister's expectations of how the New Zealand Transport Agency gives effect to the GPS.

Each GPS sets out the priorities for the following 10-year period and is reviewed and updated every three years.

GPS 2024 is built around four strategic priorities – Economic Growth and Productivity, Increase Maintenance and Resilience, Safety, and Value for Money.

As part of the focus on economic growth and productivity, GPS 2024 reintroduces the Roads of National Significance programme and introduces a programme of Roads of Regional Significance across New Zealand. It also sets out several major public transport projects.

Waka Kothai NZTA will consider and give effect to the GPS 2024 in developing its National Land Transport Programme later this year.

New Zealand Rail Plan

The April 2021 New Zealand Rail Plan (NZRP) outlines the Government's vision and priorities for the national rail network. The NZRP is an output of the recommendations of the Future of Rail review by the Ministry of Transport, NZTA, KiwiRail, and Treasury, which sought to identify the role of rail in the transport system together with a sustainable long-term funding approach.

The NZRP sets out the government's vision and priorities for rail and its intentions for the first decade of investment needed to achieve a reliable, resilient, and safe rail network. The Government's long-term vision is to provide modern transit systems in New Zealand's largest cities and to enable increasing volumes of freight to be moved off the roads onto rail. In relation to public transport the strategic investment priority is investing in metropolitan rail to support growth in New Zealand's largest cities.

The NZRP identifies the following future opportunities for the Wellington Metro Rail Network and services to accommodate current growth and safety expectation in the medium term:

- new trains for Wairarapa and Capital Connection and increased service frequency (including a new depot and Wairarapa Line capacity and safety upgrades)
- signalling improvements and automated train protection
- re-modelling rail approaches to Wellington Station to add capacity
- improvements to platforms and station facilities coupled with greater integration with other modes of transport.

Beyond that, the NZRP notes that, with growth and increased pressure on capacity, additional investment may need to be considered to:

- reduce length of the North and South Junction single track section on the Kapiti Line between Pukerua Bay and Paekakariki
- provide an additional platform at Waikanae
- replace and/or expand the electric multiple unit (EMU) fleet
- provide further grade separation
- upgrade the Wellington Station passenger terminal and building.

Regional Strategic Context

The Wellington region covers 8,111km^2 of the lower North Island. The northern boundary goes from the north of Otaki on the west coast across to north of Castlepoint on the east coast. There are nine territorial authorities within the Wellington region. These are the Kapiti Coast District Council, Porirua City Council, Upper Hutt City Council, Hutt City Council, Wellington City Council, Masterton District Council, Carterton District Council, South Wairarapa District Council and Tararua District Council (part only).

There are over 550,000 people in the Wellington region. All parts of our region are growing. Current projections see the region's population steadily grow by 0.9 percent annually over the period of this AMP.. The Wellington region boasts the most used public transport system in the New Zealand.

Transportation priorities

GWRC is responsible for developing policies and plans that direct the activities of the region including public transport. GWRC is required to consider the Government Policy Statements when developing these policies and plans.

The transportation priorities of GWRC are discussed below.

GWRC

GWRC promotes an extraordinary region by ensuring a low carbon economy, public transport choice, and a resilient economic base with modern and robust infrastructure.

As an activity group of GWRC, our strategic direction and planning accounts for GWRC's vision and purpose which are:

- **Vision:** An extraordinary region – thriving environment, connected communities, resilient future.
- **Purpose:** Working together for the greater environmental good.

GWRC's desired community outcomes are:

- **Thriving environment:** Healthy waterways and coastal waters, clean and safe drinking water, unique landscapes, indigenous biodiversity, sustainable land use and a prosperous low emissions economy.
- **Connected communities:** A vibrant and liveable region in which people can move around on safe, sustainable, and effective public transport, there is inclusive and equitable participation, and our sustainable rural and urban centres are connected to each other.

- **Resilient future:** Safe and healthy communities, a strong and thriving regional economy, adapting to the effects of climate change and natural hazards, community preparedness and modern robust infrastructure.

We contribute to:

- **a thriving environment** by lowering the carbon emissions and pollutants created by our transport network
- **Connected communities** by ensuring our public transport network is accessible and efficient so people can get to the places they want to go
- **Resilient future** by future proofing our public transport network to ensure people can continue to move around the region.

GWRC's Wellington Regional Land Transport Plan (RLTP)

The RLTP is a collaboration between all local councils in the region as well as GWRC, Waka Kotahi NZTA, KiwiRail, and the Department of Conservation. The RLTP is overseen by the Regional Transport Committee on behalf of GWRC. It is the strategic document that guides the development of our region's transport system and investment, including public transport. It identifies our region's transport priorities which then inform the National Land Transport Programme. We use the RTLP to communicate our region's direction and priorities with stakeholders, including the public.

The RLTP recognises and articulates the significant role transport plays in shaping what the Wellington region is like as a place to live, work, play and learn, and it provides a framework for transport planning that supports our broader goals for the region. The RLTP recognises that, as the region grows, more people and increased economic activity will place greater demand on the transport network. This demand will be especially patent on the public transport components of the overall network. The RLTP focuses on initiatives that enable us to grow in ways that make it easy for people and freight to get around while reducing congestion and carbon emissions and creating more liveable places. The RLTP also emphasises that our regional transport network must be future-proofed, accessible and stable, to be resilient enough to withstand the effects of extreme weather events.

The RLTP sets the vision for investing in a transport network that:

- offers good, affordable travel choices
- supports compact centres, liveable places, and a strong economy
- is safe
- minimises impacts on the environment
- provides for connected, resilient and reliable journeys.

Recognising that we are in an environment of economic constraint and acknowledging the importance of aligning regional resources and target investment to areas of the greatest regional benefit, to achieve its vision, the RLTP sets out the region's priority areas for investment. These are:

- **Public transport capacity:** Build capacity and reliability into the Wellington region's rail network and into Wellington City's public transport network to accommodate future demand.
- **Travel choice:** Make walking, cycling and public transport a safe and attractive option for more trips throughout the region.
- **Strategic access:** Improve access to key regional destinations, including the port, airport, and hospitals, for people and freight.
- **Safety:** Improve safety, particularly at high-risk intersections and on high risk urban and rural roads
- **Resilience:** Build resilience into the region's transport network by strengthening priority transport lifelines and improving redundancy in the system.

GWRC's Long-Term Plan (LTP)

The purpose of the LTP is to provide a long-term direction for GWRC. The LTP sets out GWRC's long-term strategic direction (including vision and community outcomes) and medium-term priorities that inform our planning. The LTP sets out the programmes and projects that GWRC will deliver over the period the LTP covers and provides the details on how much this will cost and how it will be funded. It also includes information about GRWC's council-controlled organisations, the financial and non-financial assumptions that guide GWRC's planning, GWRC's 10-year Financial Strategy and 30-year Infrastructure Strategy, and the performance measures linked to key levels of service that help to keep the community informed on how well GWRC is delivering against the commitments made in the LTP. Public transport is a significant part of GWRC's long term planning focus, accounting for approximately 64% of GWRC's total operating expenditure. The LTP is reviewed every three years to ensure it remains relevant, and if changes are required during the three years they are addressed through the annual planning process.

The Infrastructure Strategy provides details of the level and timing of investment needed to operate, replace, renew, and upgrade existing facilities and the Financial Strategy outlines the required rating and debt levels to fund these investments. Together, the two strategies outline how GWRC intends to balance investment in assets and services with affordability. The council uses its asset management plans as a basis for, and to deliver, the Infrastructure Strategy

Our strategic priority is to provide an "efficient, accessible and low carbon public transport network". We will deliver on this via our three key result areas of

decarbonisation of our public transport fleet, encouraging a move from private vehicle to public transport, and ensuring accessibility by:

- contributing to the regional target of a 40% increase in regional mode share from PT and active modes by 2030,
- reducing public transport emissions by accelerating decarbonisation of the vehicle fleet
- continuing to improve customer experience across all aspects of the network

The following principles embodied in the Infrastructure Strategy ensure a consistent and considered approach for managing infrastructure:

- Solutions account for risk appetite, life cycle costs and demand factors
- Enabling innovative designs that are inclusive, and accessible
- Flexible approaches to ensure our services are resilient to future opportunities and challenges
- Working with our partners and recognising the role our infrastructure plays in national systems
- Underpinning these is a central principle 'looking after what we have and innovating for the future.'

These principles mean our investment plans will aim to:

- provide an effective and efficient integrated public transport network.
- invest in and improve the public transport.
- deliver cost-effective, planned, systematic, and sustainable services at agreed LoS for present and future customers at the lowest whole of lifecycle cost
- provide a high level of continuity in service delivery, albeit with some planned disruptions, while minimising significant unplanned disruptions.

GWRC's RPTP

The RPTP provides the strategic direction for our region's public transport network, consistent with the RLTP. The RPTP communicates how we propose to develop our public transport network and is used to engage with all our stakeholders for developing and improving the public transport network in the region.

Wellington Strategic Rail Plan 2022 (Rail Plan)

In July 2022, the Rail Plan was endorsed by GWRC. The Rail Plan is a 30-year customer-driven strategic investment plan that outlines what is required beyond current investment to help drive the region's economic development and social wellbeing in an environmentally and socially sustainable, and resilient manner. It covers the passenger services and infrastructure needed to deliver a modern transit system, and the network

infrastructure required to support this system while also enabling a growing freight operation.

The Rail Plan, drives a move from private vehicle to public transport over a 30-year programme by providing:

- highly connected stations in communities where people work, live, play and learn
- accommodating stations that make any wait both pleasant and productive
- frequent services that are faster and more convenient than by car
- reliable services that recover quickly from disruption
- links that facilitate convenient connections for national freight customers
- infrastructure and safety systems that enable transport without undue conflict.

Train frequency will be able to progressively improve as infrastructure is improved. Peak train services on the Hutt and Kāpiti lines would be increased in 2026 to four trains per hour, along with improved longer distance services to Masterton and Palmerton North by 2029. The peak service frequency is proposed to step up to six trains per hour (every 10 minutes) on the Hutt and Kāpiti lines by 2032, along with inter-peak services increasing to four trains per hour. The Kāpiti line is expected to further improve to 10 trains per hour during the peak by the mid to late-2030s, and the Hutt Line by early to mid-2040s.

The Rail Plan addresses and aims to overcome the following three fundamental problems currently at the heart of the region's rail system:

1. Inconsistent customer journey experience and limited rail system capacity result in the network being unable to meet mode share targets, which prevent achievement of growth and environmental obligations

2. Current infrastructure is not capable of safely accommodating additional trains, restricting the options available to accommodate future demand

3. The condition and configuration of the rail network makes it vulnerable to service disruptions, which has a flow on impact onto the wider transport system.

Addressing these issues will enable us and our regional and central government partners to achieve a vision of a safe, customer focused and efficient rail passenger service to drive the region's economic development and social wellbeing in an environmentally and socially sustainable and resilient manner. The investment for this is not included within this AMP. We will look to include the expenditure within our 2023 AMP.

The Wairarapa-Wellington-Horowhenua Future Development Strategy (FDS)

The FDS sets out how we plan to deliver well-functioning urban environments in our existing and future towns and cities over the next 30 years. The FDS proposes where to prioritise housing and business development, as well as investment in infrastructure to support this development. The FDS guides regional policy development, including Regional and District Plan changes in the future, as well as Land Transport Plans, infrastructure strategies, local government LTPs and other polices.

GWRC's Annual Plans

GWRC's Annual Plans provide an update on progress on initiatives set out in GWRC's Long-Term Plan.

Wellington Regional Mode Shift Plan (WRMSP)

The WRMSP sets out how our region will make progress over the short-medium term to increase the move from private vehicles to travel by public transport, walking, and cycling. The WRMSP outlines focus areas under urban form, making shared and active modes of travel more attractive, and influencing travel demand and transport choice.

The WRMSP provides a strategic direction to our asset strategies and asset management plans.

Accounting for our operating environment

Our public transport network contributes directly to the national and regional transportation strategic priorities. As an activity group of GWRC, the plans within this AMP are directed by, and account for, the emerging trends and the strategic context within our operating environment. Our future plan is to continue to invest in all aspects of our public transport network to deliver an efficient, accessible and low carbon public transport service. We will make our network the preferred mode choice for all commuters through continuous improvement in service quality, coverage, and affordability.

Metlink: Who we are

Metlink: Who we are

We are GWRC's public transport authority which plans and delivers public transport within the wider Wellington region. Our public transport network connects people within the wider Wellington region including Wellington City, Hutt Valley, Porirua, Kapiti Coast and the Wairarapa. The network consists of five rail lines, 90 public bus routes, more than 80 school bus routes, and a harbour ferry service. Discounted taxi services provide travel support and assistance for people who have difficulty using the regular services. We are also responsible for developing and maintaining public transport infrastructure including trains, railway stations, train maintenance depot, bus and ferry shelters, signs, and Park and Ride facilities.

We focus on planning, managing, and operating a public transport network that is fit for purpose now and into the future. We regularly review our services to ensure they continue to meet the needs of the community and provide value for money for users, ratepayers, and taxpayers.

How we are funded

Our public transport network is funded through fares, GWRC rates, and investment from Waka Kotahi NZTA. GWRC sets the level of expenditure and the rates contribution as part of the LTP and Annual Plan processes, and reviews the public transport fares every year. The share of funding provided by Waka Kotahi NZTA is set by the Financial Assistance Rate.

Our key customers, partners, and stakeholders

We cannot deliver an efficient, accessible, and low carbon public transport network on our own. A crucial part of delivering our service is our working relationship with our key customers, partners, and stakeholders. To ensure we deliver an efficient, accessible, and low carbon public transport network, we continue to partner with mana whenua, central and local government organisations, customers, ratepayers, the region's residents and ratepayers, operators, and maintenance providers.

Customers

Broadly speaking, we characterise our customers into three categories. These are regular customers, customers with disabilities and impairments, and new and potential customers.

What we do

We are building an efficient, accessible, and low carbon public transport network to make GWRC even greater and we're making extensive improvements to our network to deliver faster, affordable, more frequent, and reliable services.

We plan an integrated public transport network to ensure it operates efficiently and effectively. We organise our network around a layered hierarchy of services of core routes, local routes, and targeted services. Core routes form the network's backbone, linking high demand with high capacity, direct services. Local routes include all-day medium to low frequency services connecting centres within suburban areas. Local routes complement the core network by collecting and distributing passengers from and to the core routes. Targeted services provide services to areas where there is not enough demand to justify core or local routes, or where normal services cannot meet peak demand.

To do this, we plan, fund, and operate the Wellington region's public transport network of train, bus, and harbour ferry services. We own and maintain parts of the public transport network, including trains, railway stations, and bus shelters. We contract companies to operate the train, bus, and harbour ferry services on our behalf. We provide customer information about our public transport services, as well as providing a transport subsidy scheme (Total Mobility) for people with disabilities who cannot easily use public transport.

Our activities are split into six components:

1. **Rail services** provide the core routes which form the network's backbone, linking areas of high demand with high capacity, direct services with extensive operating hours. Our rail services activity covers:

    - determining the service level and timetable for rail services
    - planning for the future development of the rail services (the Wellington Regional Rail Plan)
    - procuring and funding the operator to provide services
    - owning, and/or funding, and/or managing assets necessary for the services, including:
        - the rail network owned and maintained by KiwiRail
        - the electric trains that service the metropolitan area and the carriages that service Wairarapa
        - the electric train depot
        - railway stations
        - pedestrian overbridges and underpasses
        - Park and Ride facilities

In 2013, GWRC signed an 85-year track access agreement with KiwiRail. This agreement provides us guaranteed access to the rail network and defines the responsibilities of each party.

2. **Bus services** provide the core routes which form the network's backbone, linking areas of high demand with high capacity, direct services with extensive

operating hours; the local routes providing local access to town and activity centres within the suburban areas and complement the core routes; and targeted services providing services to areas or link destinations where there is low demand, or where normal services cannot meet the peak demand. Our bus services activity covers: https://www.tepapa.govt.nz/discover-collections/read-watch-play/maori/te-reo-maori-te-papa/te-reo-maori-quizdetermining the service level and timetable for bus services

- planning for the future development of the bus fleet and services
- procuring and funding the operator to provide services
- owning and/or funding and/or managing assets necessary for the services, including bus fleet, bus infrastructure such as bus stop signs, bus shelters, bus hubs, and other associated infrastructure.

3. **Ferry services** (including some infrastructure) provide the East West ferry service to and from Eastbourne and Seatoun to the city.

4. **Fares, ticketing, customer services and information** involves a number of initiatives designed to retain and grow public transport patronage by:

   - managing and setting the rules for public transport fares, and managing the public transport ticketing system
   - information about the public transport services for customers to plan and undertake journeys. This includes real time information, journey planning tools, and timetable information - delivered through Metlink analogue and digital channels and third-party digital information providers.
   - managing the Metlink brand and the promotion of public transport
   - managing contact with customers, including the provision of a call centre
   - understanding customer experience and monitoring customer satisfaction with our services to help us to continually improve them.

5. **Public transport network planning** involves:

   - planning the network so that it operates efficiently and effectively.
   - preparing the GWRC's RPTP which includes identification of the public transport services that are integral to the public transport network; the policies and procedures that apply to those services; and the information and infrastructure that support those services
   - reviewing services to ensure that they are meeting the needs of the community that they serve and providing value for money for users, ratepayers, and taxpayers.

6. **Te Hunga Whaikaha Total Mobility** provides subsidised door-to-door transport services for 15,022 customers who are unable to independently use buses, trains, or ferries due to a permanent impairment – the service aims to ensure our customers continue to have access to an affordable travel option. Our main activities for total mobility include:

    - managing customer applications for the service including contracting assessment agencies to provide eligibility assessments
    - contracting transport operators to provide adequate and appropriate Total Mobility services
    - administering and monitoring Total Mobility to ensure effective and efficient delivery of services.

Under PTOM we take an active role in the operation of the bus network with respect to network planning, service delivery, fare revenue, ticketing equipment, and customer engagement.

The region we serve

The Wellington region is an interdependent network of cities, towns, and rural areas with a modern urban economy paired with a quality natural and social environment. It covers 8,111km2. The northern boundary goes from the north of Otaki on the west coast across to north of Castlepoint on the east coast as shown Figure 6. The Wellington region is home to approximately 550,000 people.

Figure 6: Wellington region

Many people within our region are completely reliant on our public transport network. Our public transport network encourages people to get involved in social and economic activities. This includes people with disabilities, the elderly, young people, and people on low incomes.

Our public transport network is a major contributor to the region's social, economic, and environmental goals by providing access between peoples' homes and where they work, play, study, and access community services. It also aids decreasing traffic congestion, particularly in the morning and afternoon peak periods which contributes to the reduction of vehicle emissions from private vehicles within our region.

Our Vision and Strategic Focus Areas

Our public transport network helps connect and grow our region and contributes to the overall wellbeing of the Wellington region. To help create an even greater Wellington region, our vision is to provide an efficient, accessible, affordable and low carbon public transport network. We will deliver on this through our three key result areas of improving access and accessibility so people in the region are able to access our public transport network with ease and dignity, encouraging the move from private vehicle to public transport, and decarbonising our public transport fleet. Therefore, our three key result areas as outlined in Table 1 describe these relationships.

Table 1: Our strategic focus areas, levels of service, and performance measures

Community Outcome	Strategic Priority	Strategic Focus Areas	Strategies & Plans	Levels of Service	Performance Measures
Thriving environment Connected community Resilient future	An efficient, accessible, affordable, and low carbon public transport network	Improve the quality and accessibility of public transport	Regional Public Transport Plan (Supported by the Asset Management Plan) Accessibility Action Plan	People in the region can access the public transport network with ease and dignity	Progress against the approved expenditure in Accessibility Action Plan
		Continue to improve customer experience across all aspects of the network by making it easier to adopt and use Prioritise the safety and maintenance of the public transport network to encourage safe behaviours	Public Transport Plan	Provide a consistent and high-quality customer experience across the public transport network	Passengers' overall satisfaction with the Metlink public transport network Measured based on twice yearly customer survey

Community Outcome	Strategic Priority	Strategic Focus Areas	Strategies & Plans	Levels of Service	Performance Measures
		40% increase in regional mode share for Public Transport and active modes by 2030, including delivery and implementation of Wellington Regional Rail's Strategic Direction	Regional Land Transport Plan Public Transport Plan	Promote and encourage people to move from private vehicles to public transport and active modes	Wellington's public transport and active mode share of journeys, measured by average boardings per capita
		Reduce public transport emissions by accelerating decarbonisation of the vehicle fleet (bus, rail, ferry)	Regional Land Transport Plan Public Transport Plan	Minimise gross emissions for Metlink's public transport fleet and, reduce the offsets required to reach net carbon neutrality.	Tonnes of CO2 emitted per year on Metlink Public Transport Services
					Proportion of service kilometre that are by electric vehicles (matches in with VKT)
					Emissions per passenger (emissions (kgCO2e)/#passengers /annum), includes all modes

We have identified several initiatives that will assist us to achieve our vision and focus areas. Those initiatives relevant to the AMP are reflected in our Expenditure Summary and detailed in our Asset Class Plans.

Regular customers

This group of customers use public transport on a regular basis to access jobs, education, healthcare, cultural activities, shops, friends, and whanau. Over half of public transport trips occur during peak periods to work and education.

Most regular customers use public transport by choice, with many choosing to live close to public transport services. Other modes of transport are often used to complement their journey, such as walking, biking, driving, or being driven.

However, over 15% of our public transport customers are dependent on public transport. This may be because they have no alternative way of travelling due to, income, disability, impairment, lack of access to a private vehicle, or because they do not have a driver's licence.

With a continual focus on improvement in services, these regular customers could be encouraged to use public transport more often (for instance outside of their normal peak time travel or when their circumstances change). Our regular customers require and expect our public transport to:

- go where they want to go, at times they want to travel
- provide value for money
- be easy to understand and use
- be safe, comfortable, and reliable
- provide flexibility, allowing them to change their plans
- provide competitive journey time

To meet these requirements and expectations of our public transport network it is essential we provide:

- accurate real-time information and prompt updates about changes to services and disruptions
- quick and easy payment methods
- affordable fares
- information and facilities that help them make a connected journey using multiple modes of travel, such as between buses and trains, cycling or walking, for part of that journey
- clean and safe vehicles and facilities
- adequate shelter from the weather in exposed waiting areas
- services and facilities near commonly accessed places, such as work, shopping centres and medical facilities
- easy to access vehicles and facilities.

Customers with disabilities and impairments

Because of the many uncertainties during a typical customer journey, people with disabilities and impairments are under-represented in our current customer base. However, for many people with a disability or impairment, public transport is often the only available or affordable option for travel.

Customers with disabilities and impairments require a high level of consistency and certainty for their travel and expect our public transport network to:

- have accessibility features consistently incorporated into all vehicles, facilities, and services such as wheelchair-accessible and super-low-floor buses, access to trains, accessibility and safety standards in the design and development of public transport facilities
- demonstrate commitment to 'Universal Design' principles to ensure everyday features across the network consistently meet the needs of people with disabilities as well as the wider population.
- engage people with disabilities in the co-design and development of new facilities and services
- have accessible information, including in formats tailored for specific needs
- offer concessionary fares
- provide training and demonstrate awareness of disabled peoples needs by staff who are in contact with customers
- provide appropriate assistance when required – especially when there is a potential safety risk.

We are committed to making it easier for disabled people to access public transport across the region. GWRC's Transport Committee adopted the Accessibility Charter in September 2021. The Accessibility Charter is the first step towards making our public transport network accessible for all with ease and dignity. Following on from this, in August 2023 we published our first Metlink Accessibility Action Plan for achieving our commitments to increasing access for disabled people to our public transport network.

The Accessibility Action Plan maps out accessibility improvement priorities for our rail stations, bus stops, and vehicles which will improve access to services and equity of outcomes for our communities. Ultimately, it aims to create an accessible network by establishing seven fully accessible station hubs in each area of the region that connect with reliable bus services. This will allow people with disabilities to confidently plan and undertake public transport journeys to key regional destinations such as Wellington Regional Hospital. This sets the way forward to realising our vision of an inclusive public transport network for all.

Currently, where we have control over infrastructure design and maintenance, accessibility is a key input into our decision making to ensure that all transport users have equal opportunities to travel. Where we do not have control over infrastructure design and maintenance, we work to influence our strategic partners to consider accessibility in decision making.

We ensure that our vehicle fleet meets required standards for disability access in compliance with Waka Kotahi NZTA's Requirements for Urban Buses and Rail Safety Licence requirements as set out in the RPTP. Rollout of the on-bus announcement (OBA) system is almost complete. The OBA system provides bus journey information to people with visual and cognitive disabilities. It provides audio-visual information about the next bus stop, key interchanges, the current location of the bus, and network related information (such as public health messages and conditions of carriage).

We review the Accessibility Action Plan annually so that goals and priorities can be updated. Health providers and disability groups are key stakeholders.

New and potential customers

New and potential customers are people who have never used or infrequently use public transport in the Wellington region. Providing them with a reason to use public transport and a good experience throughout their journey will encourage them to adopt public transport as an occasional or preferred mode of travel.

The RLTP has set an objective of achieving 40% mode shift to public transport, cycling and walking by 2030. Adoption of public transport by new customers will be the primary driver of achieving this this outcome.

Many people depend on a private vehicle. These people are unlikely to adopt public transport for practical reasons. However, a change in individual circumstances, such as children becoming more independent, new house, or new job, or expectations have changed, such as increasing road congestion causing increasing journey times and cost, is an opportunity for them to adopt public transport, if it can provide a viable alternative, in terms of reliability, speed, cost, and comfort.

To attract new and potential customers we need to offer:

- frequent and reliable services that allow flexibility and options
- comfortable vehicles and waiting facilities
- convenient and seamless access to services and destinations
- accurate real-time information about departures and journey times
- competitive travel times
- quick and easy payment.

Key Partners

A crucial part of running our public transport network is our relationship and partnership with mana whenua, central government agencies such as Waka Kotahi NZTA and the Ministry of Transport, territorial authorities, KiwiRail, and transport operators. We work together with our partners to deliver a quality service for our customers and to meet the common vision of delivering an efficient, accessible, and low carbon public transport service.

Territorial authorities, Waka Kotahi NZTA and KiwiRail provide crucial infrastructure to deliver our public transport network. Where this infrastructure is not fit for purpose or there are gaps, this impacts on reliability and customer satisfaction.

We work with territorial authorities and Waka Kotahi NZTA. At a strategic level, GWRC works with the Regional Transport Committee through the Regional Land Transport planning process to identify region wide priorities and prioritise activities. On an operational basis, we work with territorial authorities and Waka Kotahi NZTA to ensure public transport services are integrated and delivered efficiently and effectively through regular liaison meetings and information sharing.

KiwiRail is the key rail network infrastructure owner. In 2013, GWRC signed an 85-year track access agreement with KiwiRail. This agreement provides us guaranteed access to the rail network and defines the responsibilities of each party.

Mana whenua

We recognise that our mana whenua partnerships are built on shared vision and high trust, this has laid the foundation for our work alongside iwi, hapū and communities throughout the rohe.

Our objective is to stand-up and develop services through partnership initiatives across all facets of public transport delivery. We recognise that participatory practices that look to partner with mana whenua of the region are key to our success. Going forward we look for co-design opportunities and partnership outcomes through:

- Mana whenua vibrancy and design -inputs at concept design phase across our new public transport facilities
- opportunities for partner-projects that commission iwi expertise in design and implementation of new public transport facilities.
- embedding tikanga and kawa throughout our significant projects to ensure that mana whenua can enact their indigenous rights and responsibilities (as kaitiaki).
- increasing the use of Te Reo Māori within our media platforms, including signage and digital displays (Most recently this includes the use of Te Reo on

our on-bus announcement system. As part of this the digital voice has been sculpted to ensure correct Te Reo pronunciation of place names).

We meet regularly with iwi representatives within the Wellington region to support and build partnership approaches on things that matter to mana whenua.

MoT

The MoT is the government's principal transport advisor. Their aim is to improve the overall performance of the transport system, improve the performance of transport Crown entities, and achieve better value for money for the government from its investment in the transport system. It gives effect to government policy by supporting the development of legislation, regulations and rules. The MoT also manages and accounts for funds invested in transport.

The MoT is responsible for drafting and consulting on the GPS on land transport.

Waka Kotahi NZTA

Waka Kotahi NZTA's primary objective is to contribute to an effective, efficient, and safe land transport system. Its functions include managing funding of the land transport system including auditing the performance of organisations receiving land transport funding; managing regulatory requirement for transport on land; issuing guidelines for, and monitoring the development of, regional public transport plans; determining which activities should be included in the National Land Transport (NLT) Programme and managing the prioritisation of investment in the programme; approving activities as qualifying for payment from the NLT; and approving procurement procedures for land transport activities.

Waka Kotahi NZTA's requirements and expectations of us is that our public transport services and infrastructure supports their strategic priorities, is cost effective, funded and procured correctly and the rail system is managed in a safe manner.

Territorial authorities (TAs)

There are nine TAs within the Wellington region. TAs are responsible for public transport planning within their territory. They are the infrastructure owners of the roads on which the services operate, the footpaths, the wharves and piers from which the ferries operate, and some bus shelters, covered walkways and seats. The local TAs own the wharves and piers used by the ferries.

The TAs' requirements and expectations are that our public transport network supports their economic and urban development, and their sustainability goals. They also expect that our public transport services and infrastructure are cost effective and meet the needs of their residents.

KiwiRail

KiwiRail owns, maintains, and operates the rail network. It controls network operations, provides rail operators with the access to the tracks, and implements, coordinates, and maintains an approved safety system for the rail network. We have a long-term Access Agreement with KiwiRail which provides us with guaranteed access to the network and defines the responsibility of each party.

We work with KiwiRail to ensure effective demand forecasting, infrastructure planning, and business case development.

Transport operators

Our network is serviced by several transport operators as shown in Table 2.

Table 2: Our service operators

Service	Operator
Bus	NZ Bus, Tranzit Group, Mana Coach Services, Uzabus
Rail	Transdev Wellington Ltd (Transdev)
Ferry	East by West

Our transport operators are discussed further below.

Rail operator

From 3 July 2016, we commenced a 9+6-year performance-based partnering contract with Transdev Wellington Ltd (Transdev) to be the rail operator for our region. We are 7-years into the contract term. The 6-year extension has just been automatically awarded based on the achievement of performance requirements.

Transdev holds the rail safety licence with Waka Kotahi NZTA. Transdev has sub-contracted Hyundai Rotem to perform the maintenance function of the Matangi EMU units. Transdev and Hyundai Rotem operate under a ‘one company policy’ meaning that all standards, policies, and values are consistent across the operations and maintenance depots.

We work with Transdev to meet our common vision of delivering an efficient, accessible, and low carbon rail passenger service. Transdev’s requirements and expectations of us include effective demand forecasting, shared planning, robust rolling stock renewal planning, reliable and effective maintenance of stations, and provision of security systems at stations and rolling stock yards.

Ferry operator

East by West is our sole ferry operator that runs the ferry service within Wellington Harbour. East by West expectations are that the wharves are easy to manoeuvre into and out of and that they are suitable and appropriate for its ferry fleet.

Bus operators

Our region has an extensive bus network that provides public transport within all our cities and towns and operates as a feeder to the rail network for journeys through the region.

Under the current PTOM contracts, services are grouped into 'units' of routes. Our region's bus network is made up of 16 units. We have contracted four bus operators as shown in Table 2 above to operate our bus network.

Our bus operators' expectations and requirements are that we work together with them to meet the region's vision for public transport; bus stops are easy to manoeuvre into and out of; bus stops are easily identifiable; and bus stops are suitable and appropriate for the bus fleet and the bus fleet is of the appropriate standard.

Maintenance contractors

Maintenance contractors are contracted to maintain and improve our public transport assets. Our contractors expect that our public transport assets are easy to maintain and that stops, stations, and wharves are readily identifiable.

Our Levels of Service

Our Levels of Service

We apply the term 'levels of service' as the standard to which we deliver our public transport service to our customers and stakeholders. When we set our levels of service, we ensure they are customer focused, address the issues that are important to the communities we serve, are technically meaningful, and align with our vision of providing an efficient, accessible and low carbon public transport network.

Our public transport service also needs to contribute to the government's strategic priorities for land transport. Therefore, we align our levels of service with them and our corresponding focus areas of increasing the attractiveness of public transport relative to driving, reducing public transport emissions by decarbonising the fleet, continuing to improve passenger experience across all aspects of our network, and maintaining and improving access to public transport for all.

We aim to increase patronage on public transport network through:

- providing reliable and punctual public transport services and assets
- providing convenient and accessible public transport services and assets
- ensuring our public transport services and assets contribute to the reduction of the region's transport carbon emissions
- providing good quality public transport services and assets, by having safe, clean, comfortable, and good condition assets
- delivering information that is easy to use, understand, and supports real time journey planning and payment options

Therefore, our levels of service are the key drivers for the plans and investment identified in this AMP. Our levels of service:

- ensure people in the region can access the public transport network with ease and dignity
- provide a consistent and high-quality customer experience across the public transport network
- promote and encourage people to move from private vehicles to public transport and active modes (walking, scooter, active MaaS etc)
- minimise gross emissions for Metlink's public transport fleet and, reduce the offsets required to reach net carbon neutrality.

Consultation process to define levels of service

We take into consideration our customer views and requirements in our service level targets and resultant improvement opportunities through:

- consulting on our plans and undertaking specific service reviews

- undertaking independent public transport passenger satisfaction surveys
- examining patronage and performance data
- seeking direct feedback.

Each of these are discussed below.

Consulting on our plans and undertaking specific service reviews

Our region's people express their expectations through input into our planning process. This includes consultations undertaken for the RLTP, the Regional Public Transport Plan, the LTP, and consultation on specific projects such as service reviews and the location and design of new infrastructure. Input is also sought on the location and design of new infrastructure, for example bus stop markings and shelters.

In developing its plans, GWRC is also keen on hearing stakeholder views on what they see as priorities across the region. Engagement is always sought, and feedback incorporated into the final plans.

We continuously look to improve our network services by analysing service data, patronage trends and feedback received. In developing our plans, we seek stakeholder views on what stakeholders see as priorities across the region, and feedback is incorporated into our final plans.

Public transport passenger satisfaction survey

Each year we commission an independent survey of customers' experiences of our public transport network. This helps us identify and prioritise improvements for customers and is also part of our reporting requirements to Waka Kotahi NZTA and GWRC. The survey's independence and thorough on-vehicle survey methodology gives us a robust benchmarked measure of customer experience over time.

The most recent survey was conducted through May 2024. The results show that customer satisfaction with *'The trip'* (the customer experience on that journey) remains consistently high and on par with previous surveys. Overall satisfaction with *'The trip'* was 92%. Overall, this dropped 1% from the previous year. Bus increased 1% (to 93%). Rail dropped 2% (to 92%). Ferry dropped 2% (to 95%).

Satisfaction with *'The public transport system overall'* measures customer perceptions with Metlink's service and reputation. This has had a positive 4% increase (to 79%), from the near record low scores of the previous year due to staff shortages and related reliability issues. Reinforcing this, the score for *'The likelihood of recommending public transport'* has increased 5% to 85%.

Perceptions of *'Value for money'* have shown a very significant 19% drop in satisfaction, most likely due to the reduction of child concessions in May 2024 (the month most of

the survey was undertaken), the loss of half-price fares in August 2023 and news of impending fare increases for all from 1 July. Given most other service attributes had an increase in satisfaction, this significant drop is likely to have cancelled out the many positives and had a negative influence on the overall satisfaction scores for *'The trip'* and *'The public transport system overall'*.

Satisfaction with information Metlink provides customers has increased strongly. Satisfaction with *'PT information currently available'* has increased 8% (to 84%) and *'Information about delays and disruptions'* has improved 14% (to 64%). The increase in satisfaction with information often reflects levels of satisfaction with the reliability of services. However, the improved satisfaction also likely reflects recent improvements to the usability of the Metlink app and website, and the introduction of onboard announcements on buses. Of the scores for aspects of the trip and network relating to stops, stations, wharves, vehicles, and ease of boarding have remained steady or improved 1 to 2%.

The survey asked for suggested improvements we can make to our public transport network. These are shown in Figure 7.

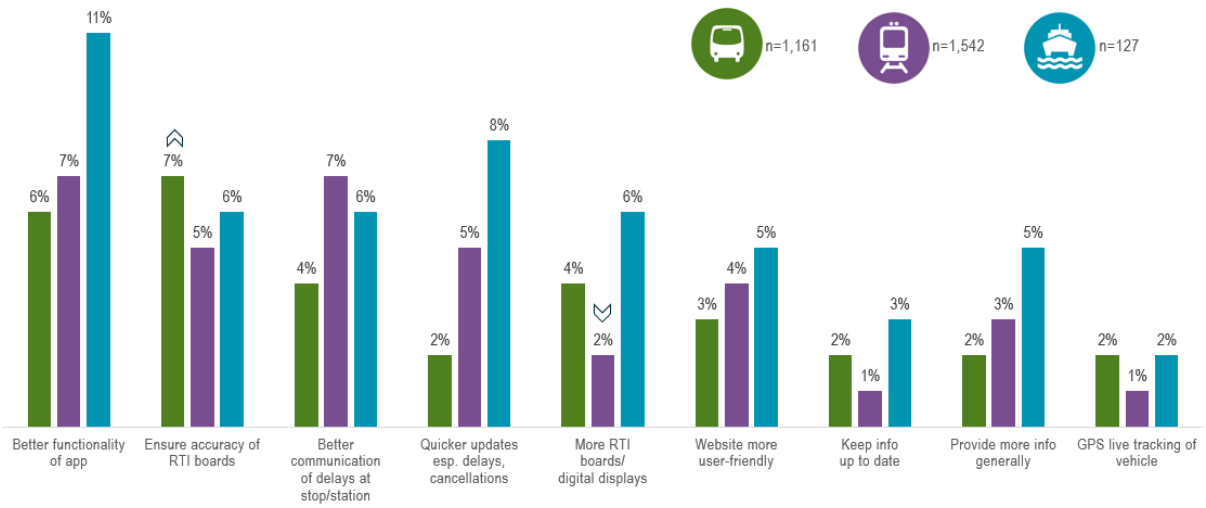


Figure 7: Customer on-board survey suggested improvements to public transport services by mode

The survey also asked for suggested improvements we can make to our stop, station and wharf assets. These are shown Figure 8.

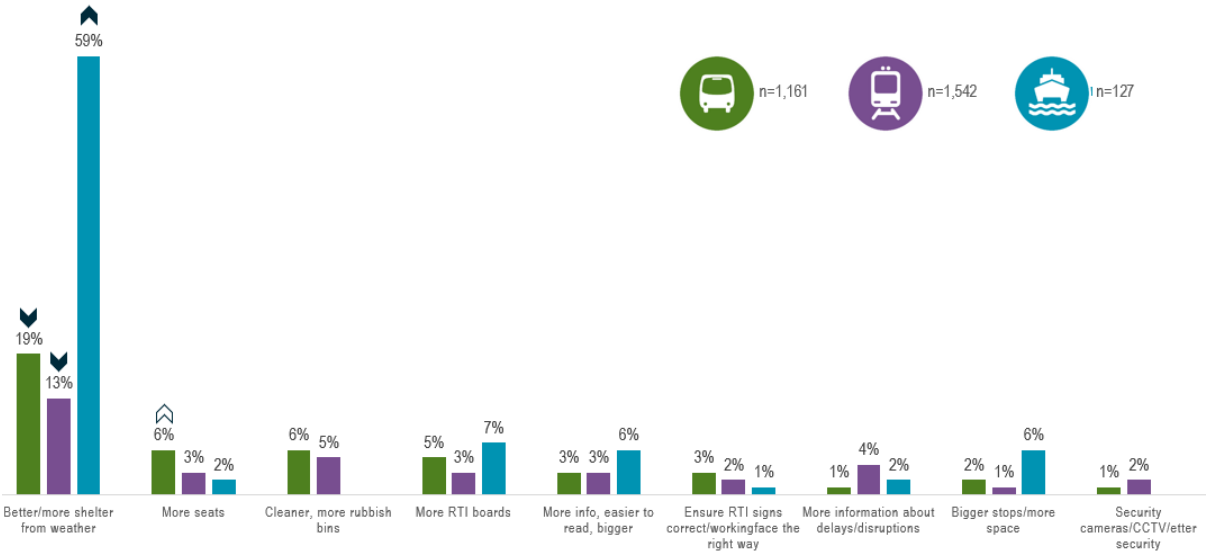


Figure 8: Customer on-board survey suggested improvements to stops, stations, and wharves by mode

The full results of the 2024 survey are here.

In response to the survey, the investment outlined in this AMP reflects the need to:

- increase capacity and service frequencies by having more carriages and buses on our network, particularly at peak times, to reduce overcrowding and increase reliability
- have more resilient infrastructure to reduce delays and breakdowns for rail
- improve the amount and the quality of real-time information for customers
- improve stop and station accessibility.

Levels of Service

We have translated GWRC's LTP performance measures into asset specific measures which we have set out in our asset class plans, as strategic investment drivers.

Our levels of service and performance measures are outlined in Table 3.

Table 3: Our Levels of Service[2]

Community Outcomes	Key Result Areas	Levels of Service	Performance Measures	Baseline (2022/23)	2024/25 Target	2025/26 Target	2026/27 Target	2027-34 Target
Connected communities	Access and Accessibility	People in the region are able to access the public transport network with ease and dignity.	Progress against the approved expenditure in Accessibility Action Plan	New Measure	20%	40%	80%	100%
			Implementation of the Accessibility Action Plan initiatives	New Measure			90%	100%
		Provide a consistent and high-quality customer experience across the public transport network.	Passengers' overall satisfaction with the Metlink public transport (by mode)	Bus 92% Rail 94% Ferry 97%	Bus 93% Rail 95% Ferry 98%)	Bus 94% Rail 96% Ferry 98%	Bus 95% Rail 96% Ferry 98%	Bus >95% Rail >96% Ferry 98%
Resilient Future	Increase in regional mode share for public transport by 2034.	Promote and encourage people to move from private vehicles to public transport	Annual public transport boarding per capita	61.9	64.2	6672.40	67.8	75.4
		Provide fit-for-purpose vehicles, infrastructure and services to continually deliver a high-quality core network that meets ongoing demand	Percentage of passengers who are satisfied with the condition of the station/stop/ wharf	91%	88%	89%	90%	>92%
			Percentage of passengers who are satisfied with the condition of the vehicle fleet	94%	94%	>94%	>94%	>96%
	Reducing public transport emissions by accelerating decarbonisation of the vehicle fleet (bus, rail, ferry)	Gross emissions for Metlink's public transport fleet will be minimised, reducing the offsets required to reach net carbon neutrality	Tonnes of CO_2 emitted per year on Metlink Public Transport Services	21,019 tonnes * 21/22 verified result	19,300 tonnes	17,900 tonnes	17,800 tonnes	16,300 tonnes**

[2] The Metlink Public Transport Passenger Satisfaction Survey, which is run twice yearly, is used to determine Customer Satisfaction. Satisfied = score of 6-10 on a scale of 0-10.

Demand and Growth

Demand and Growth

Our public transport network supports more than 37 million journeys a year on bus, rail and harbour ferry services. Every day we have thousands of people travelling with us and every one of those journeys matter to us.

A large percentage of the region's jobs are in central Wellington which reflects, in part, the concentration of government administration and knowledge-based roles in the city. This creates significant commuter peaks, as people travel to access employment opportunities from residential centres across the region. However, with changing work patterns, it is possible that travel patterns in the region will change in the future.

Prior to the COVID-19 lockdown in March 2020, patronage was set to reach new highs across the region. In 2019, there was a significant patronage increase in rail with a new annual patronage high of 14.3 million passengers - an increase of 800,000 passengers on the previous year. Peak patronage rates were even higher, with our two busiest lines Hutt Valley and Kapiti, rising by 8.6 per cent. This increase in patronage didn't happen by chance. Patronage growth is the result of hard work, significant investment in our public transport network, and understanding the public transport needs and expectations of our region's people. Prior to lockdown, growth continued into 2020 with a further 5.5% increase in peak passengers.

Higher than expected demand for rail travel meant that, prior to the Covid-19 pandemic, many services were operating at or near capacity during the busiest time of the commuter peak. For example, seated capacity and Park and Ride capacity was generally reached on the main lines at approximately 7am and some potential passengers were being deterred from using rail because the trains are full. Rail boardings have not yet returned to pre-Covid-19 levels.

Bus patronage was growing significantly prior to COVID-19 causing parts of the network to be operating at or over capacity. The 2023/24 year now sees bus patronage numbers above pre-Covid-19 levels, and we expect bus operations on the Golden Mile will reach maximum capacity in 2025. This will impact service reliability and journey times. This makes it important to continue to invest in bus infrastructure to ensure the network is fit for the future.

Space constraints on the Golden Mile mean that only a limited number of buses can reliably run on this corridor (in the order of 60-100 buses per hour per direction). This makes it difficult to add more buses without creating congestion and decreasing reliability. Outside the Golden Mile, immediate capacity constraints relate more to the availability of high-capacity buses and route clearance to permit the operation of high-capacity buses.

Figure 9 shows the patronage across the Metlink network since 2018/19.

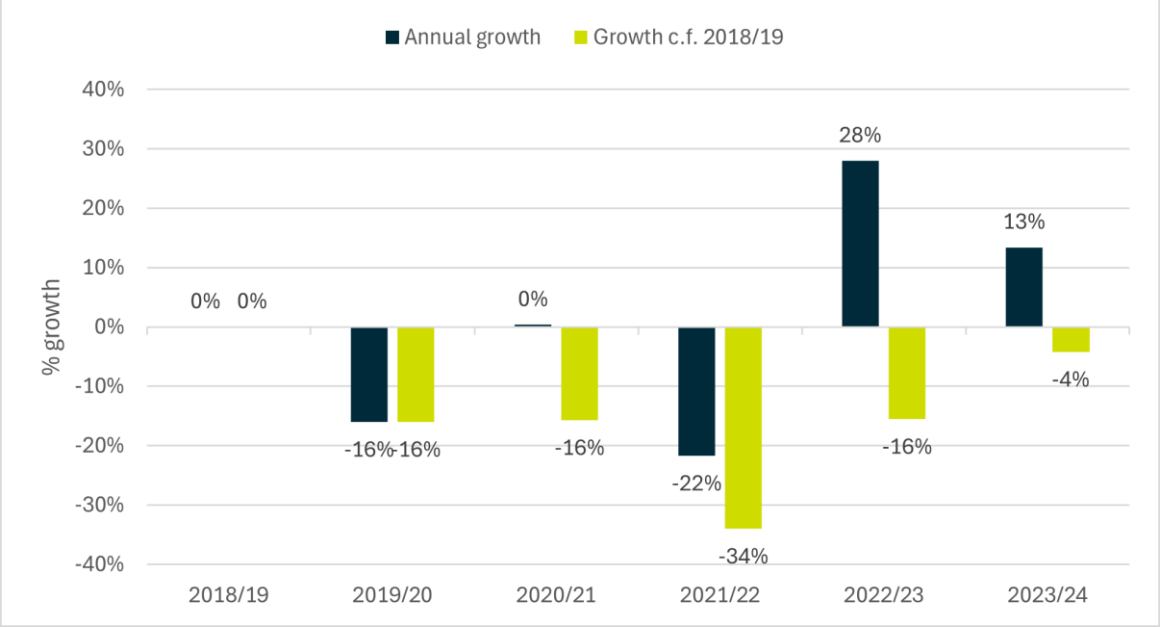


Figure 9: Patronage across network since 2018/19.

Passenger boarding trends

For our patronage performance reporting, we measure passenger boardings on all modes using boarding data. We lack reliable data on transfers between modes and on rail and ferry services. We track passenger boarding trends to provide insights such as whether passengers are choosing to use specific services.

We experienced continuing growth in passenger boardings up to February 2020. This then decreased from mid-March 2020 onwards due to Covid-19, with a move to 'Level 4' in August 2021, and in late January 2022 a move to 'Red' under the Covid-19 Protection Framework. We can now see growth again across our network. This has not yet reached pre-Covid levels as shown in Figure 10.

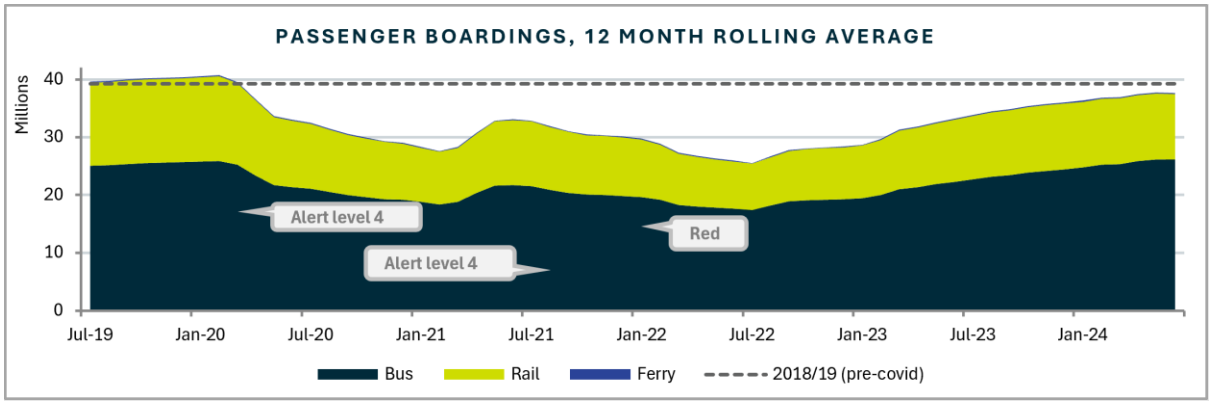


Figure 10: Number of passenger boardings for all modes from July 2019 – 12 month rolling total

Further commentary on our bus, rail and ferry boarding trends is provided below.

Bus passenger boardings

In the year to 30 June 2024, bus passenger boardings were 173% higher than the year to 30 June 2023. Boardings were 5.6% higher than the year to 30 June 2019 (pre- Covid-19).

Table 4 shows the increase in bus passenger boardings for the year to 30 June 2024 compared with the year to 30 June 2023.

Table 4: Bus passenger boardings 2023/24 vs 2022/23

	2023/24	2022/23	% change
Wellington	19376672	16455522	17.8%
Hutt Valley	4956156	4257336	16.4%
Porirua	960392	812023	18.3%
Kapiti	674304	590930	14.1%
Wairarapa	165572	157022	5.4%
Total	26133096	22272833	17.3%

Figure 11 shows the monthly bus passenger boardings from July 2018 to June 2024.

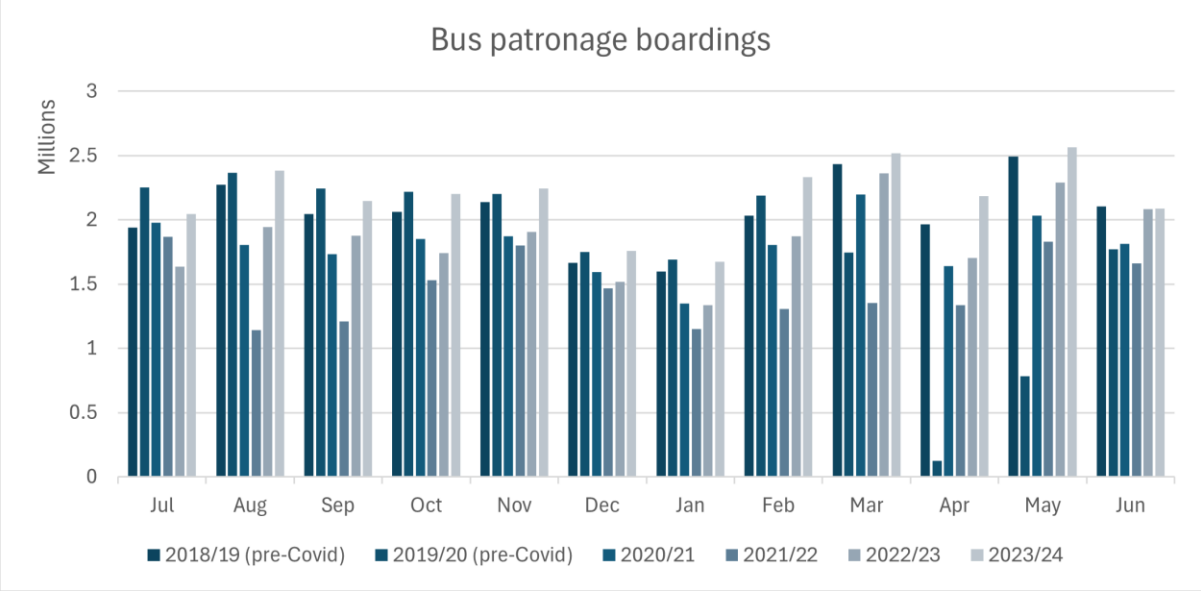


Figure 11: Monthly bus passenger boardings from July 2019 to June 2024

Rail passenger boardings

In the year to 30 June 2024, rail passenger boardings were 5.5% higher than the year to 30 June 2023. Boardings were 21.1% lower than the year to 30 June 2019 (pre-Covid).

Table 5 shows the increasing rail passenger boardings for the year to 30 June 2024 compared with the year to 30 June 2023.

Table 5: Rail passenger boardings by line 2024 vs 2023

	2023/24	2022/23	% change
Hutt Valley	4827243	4592480	5.1%
Kapiti	4619311	4277522	8.0%
Johnsonville	1252154	1257876	-0.5%
Wairarapa	603349	583807	3.3%
Total	11302057	10711685	5.5%

Figure 12 shows the monthly rail passenger boardings from July 2018 to June 2024.

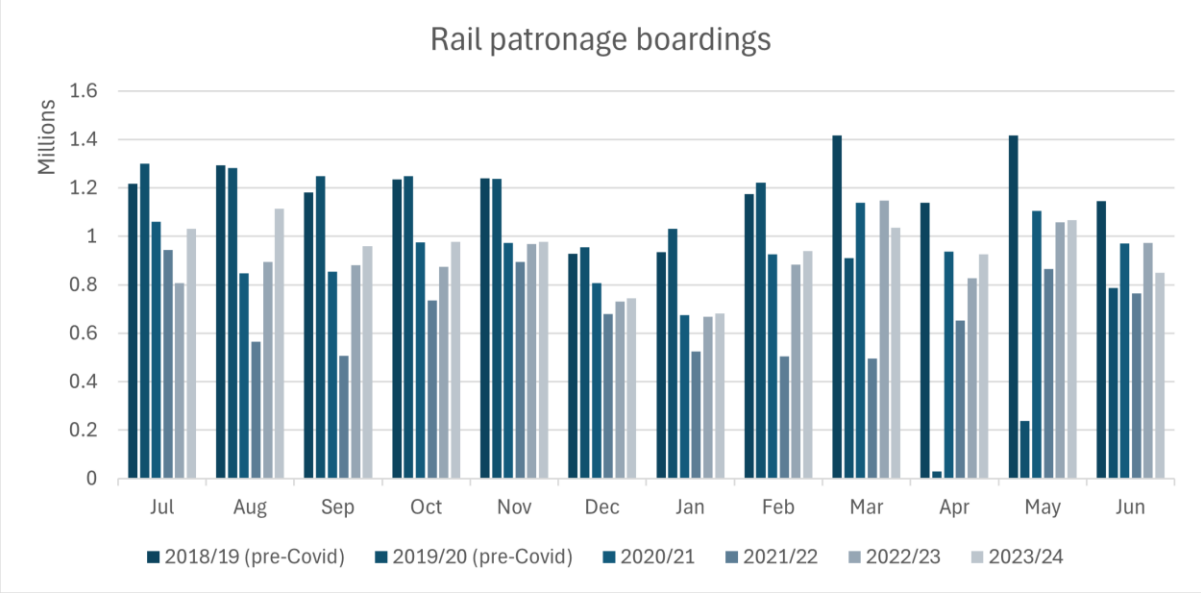


Figure 12: Monthly rail passenger boardings from July 2019 to July 2023

There was also an increase in total peak growth of 4.0% as shown in Table 6.

Table 6: Rail peak passenger boardings by line 2024 vs 2023

	2023/24	2022/23	% change
Hutt Valley	3069731	2929619	4.8%
Kapiti	3105394	2933898	5.8%
Johnsonville	714068	729235	-2.1%
Wairarapa	483488	493368	-2.0%
Total	7372681	7086120	4.0%

Ferry passenger boardings

Ferry passenger boardings were 3.4% lower in the year to 30 June 2024 than the year to 30 June 2023. Boardings were also 7.00% lower in the 2023/24 year than the 2018/19 year (pre-Covid-19). Ferry boardings are often affected by weather. Ferry boardings are also currently affected by the closure of Matiu Somes Island due to the rebuilding of the wharf.

Figure 13 shows the monthly ferry passenger boardings from July 2018 to June 2024.

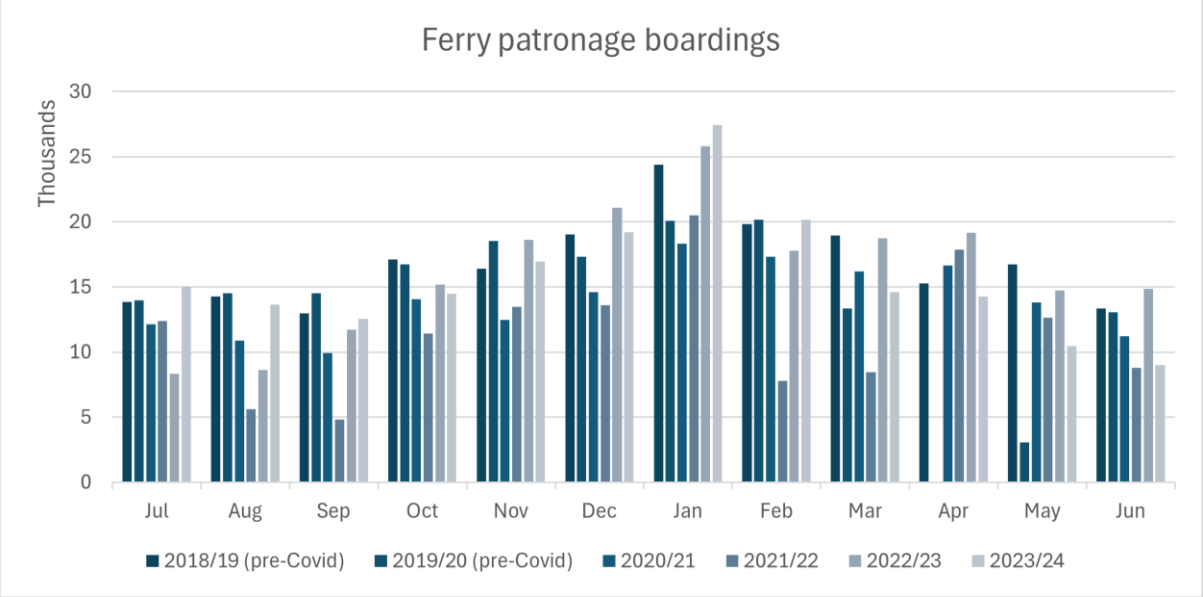


Figure 13: Monthly ferry passenger boardings from July 2019 to July 2023

Expected growth

To plan and budget for the period covered by this AMP, we make assumptions around population and demographic changes, and how these will potentially impact our public transport network.

Projected change to the regional population affects future demand for our infrastructure services. Current projections will see our regional population (554,200) steadily grow by 0.9 percent annually (2021-51) with an expected growth of 164,000 residents over this period (30 percent). This is a slight decline in previously projected growth (1 percent) due in part to COVID-19 related immigration changes. Regional growth rate variations are expected, with higher annual growth rates (1.3 percent) forecast in Masterton and Carterton. Our greatest numerical increases are expected in Wellington (50,100 additional residents), Lower Hutt (34,900) and Kapiti (21,200)[3].

Age profile projections indicate a progressively aging population structure. The highest growth rates are projected within the +50-year age groups, especially in Kapiti and Wairarapa. Relative growth rates also vary by ethnicity. Maori and Pacifica groups are projected to increase as a proportion of the total regional population, particularly in Porirua and Lower Hutt. These projections collectively suggest a steady increase in the regional population that will increasingly age and become more ethnically diverse. As

[3] Sense Partners 2023

population increases, we can expect an increase in the number of residentially dwellings and demand for our infrastructure and services. Factoring in expected future demand is important as a means of future-proofing our infrastructure and associated services.

Careful planning is required to ensure development of our public transport network meets the changing needs of our communities and is sustainable, in particular:

1. Whilst there remains a level of uncertainty with respect to the impacts of Covid-19, patronage, growth could outstrip capacity on some services or corridors in the short term. Providing for capacity growth is a key investment area for Metlink.

2. In the medium and longer term, we need to consider new communities or areas of growth in our investment planning to ensure we continue to provide the levels of service our customers need.

There is a need for increased focus on accessibility, mobility, and mobility services to be reflected in our service levels and investment planning throughout the period.

Patronage Growth

The 2024-34 LTP assumes that public transport patronage will grow at the rates shown in Table 7. The actual bus patronage growth seen in 2023/2024 has been considerably higher than what was anticipated at the time the LTP was drafted. During the same period, rail patronage was still 20 percent lower than pre-COVID levels showing an annual growth rate lower than what was anticipated at the time the LTP was drafted.

Table 7: Forecast patronage growth rates

Mode	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34
Bus	5.30%	4.70%	3.50%	3.70%	3.40%	3.50%	3.20%	1.90%	1.80%	1.60%
Rail	10.40%	5.50%	4.30%	4.60%	4.70%	4.50%	3.50%	6.10%	2.80%	1.30%
Ferry	3.00%	4.70%	2.70%	2.60%	2.60%	2.60%	2.50%	1.60%	1.50%	1.40%

Based on the Long Term Plan 2024-34 assumptions

Considering the current trends and specifically the higher-than-expected bus growth, we are expecting that patronage levels across the network to match pre-COVID-19 levels for the first year of the Long Term Plan 2024/25. However, rail patronage is likely to remain, on average, around 15 percent lower than pre-COVID-19 levels over the first triennium of the Long Term Plan.

The changes to work habits and commuting patterns after COVID-19 appear to have had greater impact on rail patronage. It is likely that an increasing proportion of

Wellington's workforce (specifically those living further away from Wellington City) will continue working from home on some (or all) days of each week than previously, reducing travel demand for both motor vehicles and train services. Higher levels of unemployment may also continue through the first year of the LTP planning period, which could slow down patronage growth.

We believe that the major investments budgeted for in the Long Term Plan will have a significant role in countering these constraints and boosting patronage recovery for the rail network. We are expecting that the ongoing improvements to our rail network will attract more customers. In particular, the delivery of integrated fares and ticketing across the network from 2026 onwards is expected to encourage greater use of public transport by improving the convenience and ease of travelling by train (and by using more than one PT mode).

With these improvements, bus and rail patronage is expected to increase (on average) by 4 percent per annum for the duration of the 2024-34 LTP; and from 2029 onwards, rail patronage is likely to be back to 2018-2019 levels.

Depending on the timing and quantum of future growth, the current network may not have sufficient capacity on some services or corridors if the actual growth eventuates to be greater than forecast. Once capacity thresholds are met, rail and bus services are likely to become overcrowded, less reliable, and less attractive, increasing the potential for a shift to private vehicles and eventually reducing demand for our services.

The large volume of trips made to/from/and within Wellington City each day means that failure to improve capacity and reliability on the region's rail network and Wellington City's bus network will directly impact regional aspirations to increase public transport mode share and reduce transport emissions. It will also make travel around the region more time consuming and costly, with potential to constrain growth.

Having a resilient, effective, and reliable public transport system that can meet the diverse needs of our growing and changing population therefore continues to be essential, if the region is to continue to remain a desirable place for people to live, work and play. Careful planning and investment will be required to ensure the region's transport system supports and enables sustainable population growth and meets the needs of the region's communities both now and in the future.

Our investment plans presented within this AMP (see further sections below) are based on these patronage forecasts.

Risk Management

Risk Management

Risk management guides our asset management activities and investment decisions. To achieve the service our customers deserve, we take a multi-faceted approach to managing risk.

We have a top-down strategic view of risk reported to GWRC Executive and the Finance Risk & Assurance Committee. At an asset category level, our approach primarily focuses on identifying significant risks to the reliability and continuity of our service. Our asset management framework incorporates practices designed to identify and mitigate these risks.

Risk management is an integral part of our overall business philosophy and is embedded within all our activities and in the decisions we make. As a part of GWRC, we use GWRC's risk management framework. This is outlined below.

Risk Management Framework

GWRC's Risk Management Policy has the following principles which apply to asset management:

- top-down strategic view of risk management which has been integrated across GWRC's operations and processes.
- 'risk' reflects uncertainty about the future, and its impact on the delivery of our objectives depends on the opportunities or threats that arise.
- everyone within the organisation is accountable for managing risk.
- part of core ways of working through embedding risk management into the planning process (LTP and Business Plan) and by linking risks through to our strategic priorities, core business objectives and internal commitments.
- risk management is not a point in time exercise, it is a core and integrated part of day-to-day management and decision making.
- enabling us to maximise the value we create by taking opportunities as they arise even when this also means accepting some level of risk.
- evolving to ensure risk management is adaptive to change both within the organisation and when considering best practice.
- engaging to ensure risk management is understood by staff, and those involved in the process provide high quality information on a timely basis which is relevant to decision making.
- transparency and confidence to give management and governance confidence that risk management is clearly understood, and risks are being effectively managed.

Delivering on these principles, by ensuring we have effective asset risk management, will:

- increase the likelihood of GWRC achieve its objective of ensuring assets are fit for purpose to deliver the required level of service both now and in the future.
- safeguard GWRC's assets and those people using them, people resources, finances, and reputation.
- provide a timely response to risk escalation and issues as they occur.
- promote awareness of risk management process and a culture of risk management awareness such that everyone in the organisation is responsible for managing risk.
- aid decision making.
- ensure there is appropriate and effective governance.
- maintain a flexible and evolving risk management framework which is aligned with ISO 31000:2018 and best practice generally.

Our GWRC risk management framework closely mirrors the requirements of the international risk management standard ISO 31000. Our risk management approach is focused on understanding, monitoring and proactively uncertainty and risk.

Our approach to risk management includes a formal risk governance structure and clear accountabilities and responsibilities at all levels to ensure our approach to risk is ratified and continuously reviewed.

We have broadly defined the organisational risk categories as set out below in Figure 14.

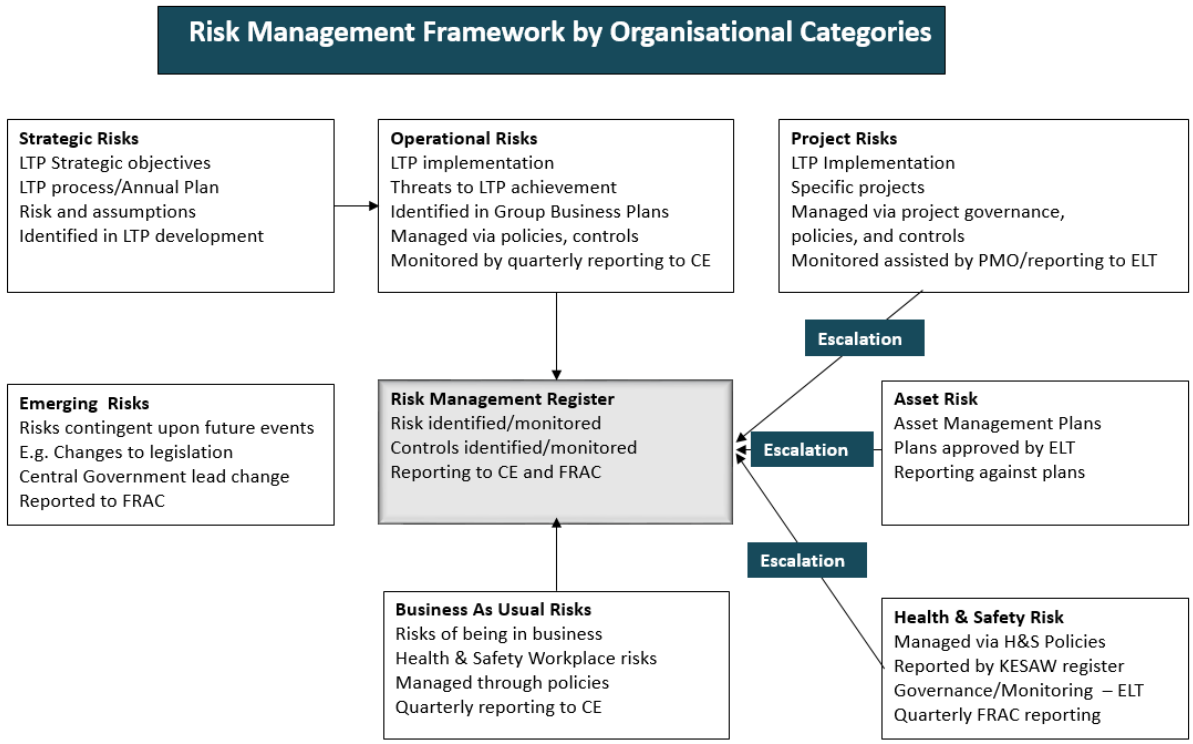


Figure 14: Risk Management Framework by organisational categories

Asset risk management

Figure 14 describes asset risk in its separate components. We are careful to consider all the aspects of risk as we build, operate, and maintain our assets. These risks include project risks, and health and safety risks and strategic risks.

We recognise there are areas of risk that relate specifically to assets, sites, or parts of our public transport network. Our asset management approach incorporates processes designed to identify and mitigate such risks which then influence our individual asset class planning.

The following sets out our practices with respect to asset risk management.

Strategic risks

GWRC has 22 uncertainties (risks) that form its top-down strategic view of risk of which fitness for purpose of assets is one of these risks. We have broken down uncertainty surrounding fitness for purpose of assets into the following areas:

- **Clarity of ownership and management of asset, data, and technology**. The extent to which roles and accountabilities (external and internal) are clear and appropriate.
- **Ability to fund improvements and maintenance.** The extent to which funding is available to deliver the required level of service expected both now and, in the future.
- **Capability and capacity of the industry, supply chain and workforce.** The extent to which resources are available as, when, and where required.
- **Internal capacity to effectively manage and maintain our asset base.** The extent to which we balance and prioritise our resources across GWRC to ensure our asset base is maintained, including cultural, social, environmental, and financial needs.
- **Societal needs and expectations.** The extent to which we can meet expectations around HSW, carbon neutrality, sustainability, resilience and affordability, accessibility, etc.
- **Validity of planning assumptions.** The extent to which historical planning assumptions hold true in the future.

These uncertainties are considered and managed through our asset management approach for each asset portfolio outlined in this AMP.

Asset risk

We continue to develop and refine our asset criticality and asset health frameworks. Together our criticality and health frameworks provide a rationale and methodology for the consistent assessment of our current assets and are used in developing our investment priorities across our public transport network. The criticality framework is based on a top-down assessment of the consequence of asset failure on Metlink's organisational vision, goals, and desired outcomes by asset class underpinned by GWRC's risk management framework.

Our asset health framework and application to asset classes continues to be an area of ongoing development. We continuously monitor the condition of our assets. Condition monitoring is carried out on regular intervals dependant on the type and function of each asset. Our decisions to replace or maintain assets are based on the results of our condition monitoring programme.

Incident Management

We investigate incidents and events during our operations to a level of detail appropriate for the seriousness of the potential or actual consequence. We use a combination of internal and external investigation practices to identify root cause and preventative and mitigation actions. Any actions arising from individual incidents or trend analysis that require us to change our asset design, or rectify assets or groups of assets, are incorporated into our investment plans for each asset class.

Operational Feedback

Customer feedback regarding assets and infrastructure is received via phone, email, or social media. The details are logged into our CRM Resolve system.

Most of the customer feedback relates to repairs, cleaning, or graffiti removal. These are forwarded directly to our cleaning and maintenance contractors who assess, clean, or repair the asset within an appropriate timeframe to ensure that the asset is not a health or safety risk. We also use this information to assess the asset condition or performance, and life expectancy of the asset.

Issues which require further investigation are logged and assigned for investigation. The log provides information on the current state and condition of assets and provides a basis for forward planning for replacements, upgrades, and new infrastructure. Our asset class plans reflect this information.

Natural disaster and climate change

Our region's infrastructure is vulnerable to natural hazards including earthquakes, tsunamis, major storms, floods and landslips, ranging from *high impact/high probability* events (e.g. a major earthquake) to *low impact/high probability events* (e.g. storms). Climate change is expected to increase the frequency and intensity of some of these hazard events.

Within our region, temperatures are warming, and weather patterns are shifting. These changes will have both positive and negative effects for different activities. Therefore, it is important that we understand the forecast impacts of climate change, so we can factor these into our infrastructure investment planning and the work we do.

In preparing for natural hazard events and climate change, we need to understand the extent of the risks our assets and services are exposed to and understand what may be required to respond or adapt to them. Accordingly, our infrastructure and asset planning decisions that assume lifespans of 30-100 years incorporate climate change projections and natural hazards events. This is particularly true for decisions that are expensive to alter or reverse.

Surface flooding, from more intense and frequent rain events, and coastal flooding, associated with sea level rise, are the biggest risks identified to our assets, infrastructure and services.[4] Consequently, our assets and activities on floodplains and/or in relative proximity to the coast are the most at risk, i.e. the lower Hutt Valley or

[4] Predictions and associated impacts from NIWA Climate Change Report for the Wellington Region.

Porirua. The area of vulnerability is not just the coastal edge but on the neighbouring vicinity.

Also highlighted are the increasing risks to our services due to failure of other infrastructure or services owned, controlled, or managed by third parties. For example, flooding of the roading network affects our public transport capability.

We continue to incorporate resilience in our investment decision-making through options assessment, asset specification, and designs.

Insurance

GWRC has insured its assets to cover the maximum probable loss that could occur from any one event. The maximum probable loss is the maximum loss that an insurer would be expected to incur on a policy, representing the worst-case scenario for an insurer, which is generally a natural disaster event like an earthquake or tsunami. Insuring based on maximum probable loss helps balance the transfer of risk to insurers with the cost of obtaining this insurance.

The global and local insurance market have experienced a difficult few years, with climate change impacting on insurers abilities to predict losses, which has seen returns plummet to levels below low risk investments such as bonds. This has strained insurance capacity impacting on our ability to obtain insurance and its cost. To ensure we remain appropriately insured, we are exploring options for self-insurance which could include a combination of higher policy excess, reduced loss limits and/or excluding asset categories or individual assets from requiring insurance.

Insurance - Material Damage Business Interruption (MDBI)

We have MDBI insurance to cover our operations. To meet this insurance excess, GWRC has set up a cash fund called the Material Damage Reserve Fund (MDRF), initially from the savings of a higher insurance excess and latterly from the proceeds of forestry cutting rights. Public transport assets (excluding rolling stock, EMU depot and EMU depot plant and equipment) are included within the MDRF, and substantially smaller excesses applying to other hazards such as fire.

Insurance - Transdev

In 2016, GWRC passed over the process to insure rail assets to Transdev, as part of the tri-party partnering contract (‘the rail contract’) between GWRC, GWRL, and Transdev.

Covered are:

- vehicles
- EMU depot
- EMU depot plant and equipment

The balance of rail infrastructure assets owned by GWRC is insured under the MDBI policy.

Insurance - Wellington Rail Network (KiwiRail)

The Wellington Rail Network (tracks, signals, and infrastructure) are owned by the Crown and managed by KiwiRail as a State-Owned Enterprise.

GWRC has a long-term agreement with KiwiRail to operate services on the Wellington Rail Network.

KiwiRail uses and negotiates insurance to manage their network risk nationally on a maximum probable loss basis, which a portion is passed to GWRC to fund.

KiwiRail has forecast significant increases in insurance premiums from 2023/24 and these costs are projected to almost double from 2023/24 to 2024/25.

From a national rail network perspective, GWRC catchment has the highest earthquake risk and a high concentration of network assets and therefore bears the largest share of the national rail network's 'Maximum Probably Loss'. This results in GWRC being allocated a disproportionate share of the National Network Insurance. GWRC is challenging this policy decision in light of the significant climate risks that are driving an increase in costs.

Our Asset Management Approach

Our Asset Management Approach

As our region grows and new transport technologies and services open up, a world class public transport system has become increasingly important to our region's liveability. The asset planning and investment decisions we make today contribute to making our region a better place to live, while making mobility cheaper, safer, more accessible, and better for our environment. It's all about providing a better public transport experience to make Wellington even greater.

GWRC's aim of reducing the region's carbon footprint incorporates a shift from people traveling in private vehicles to more people traveling by bus, train, and ferry, especially at peak times. Our vision of providing an efficient, accessible, and low carbon public transport network aligns with this and sets the foundation of our approach to asset management.

Effective asset management is fundamental to achieving our vision and the Government's strategic priorities. Asset management involves the balancing of costs, opportunities, and risks against achieving our vision, strategic priorities, and desired levels of service. We plan and continuously refine our asset management activities against the Governments' and GWRC's strategic priorities. Our approach to asset management ensures we manage our assets to deliver the desired levels of service and strategic priorities, in the most cost-effective manner throughout an asset's lifecycle, for present and future customers.

Asset management is part of our core business and is integrated with our other business processes.

Asset Management principles and objectives

GWRC's vision and strategic priorities provide an over-arching framework to ensure we are working on the things that matter. The following principles outlined in GWRC's Infrastructure Strategy shape how we manage our assets in a consistent and considered way:

- *solutions account for risk appetite, life cycle costs and demand factors*
- *enabling innovative designs that are inclusive and accessible*
- *flexible approaches to ensure our services are resilient to future opportunities and challenges*
- *working with our partners and recognising the role our infrastructure plays in national systems*.

Underpinning these is the central principle of **'Looking after what we have and innovating for the future.'**

GWRC's asset management objectives, as set out in its Strategic Asset Management Plan, are:

1. Resilient infrastructure provides critical services for our communities
2. GWRC assets are managed in accordance with GWRC's target of carbon neutrality by 2030
3. AMPs will identify the role that related infrastructure plays in climate-change adaption and carbon emissions reduction for the region[5]
4. AMP objectives align with the restoration of ecosystems and biodiversity
5. Asset Management Plans link directly with strategies and plans relating to asset functions (e.g., Parks Network Plan, Flood Plain Management Plans, Transport Plans) and ensure key asset management programmes are considered in the consultation processes particularly in engagement with Mana Whenua and Māori. Key priorities arising will be reflected in GWRC's Asset Management Plans
6. Strategic Asset Management modelling will be a significant input to AMPs enabling better resource-planning and optimisation of work programmes
7. Asset Management Improvement Plans deliver to organisational targets and recognise the benefits of AM maturity development
8. Designs are inclusive, accessible and innovative in collaboration with Mana Whenua partners and other stakeholders.
9. AMP's will continue to play a key part in GW's journey towards a low carbon emission/ transition by adopting low emissions asset options and addresses embodied carbon emissions and environmental sustainability issues

Where applicable, the Asset Class Plans further on in this AMP address these objectives.

Our asset management system

Our asset management system provides the direction for our asset planning and recognises the need for clear connectivity between central and regional government's strategic priorities and our day-to-day asset management activities. Our asset management system considers both our internal organisational structure and our

[5] Carbon reduction and climate change adaption are core to GWRC's Asset Management Policy: GWRC is 'committed to an organisational target of carbon neutral by 2030'. Assets are acknowledged to be a big carbon emitter and therefore play 'pivotal roles in achieving carbon neutrality.' The policy highlights the need to 'consider lifecycle carbon impacts of both new and existing assets' and integrating 'a lifecycle approach to carbon when planning and delivering assets is an important step in reducing carbon emissions to achieve emission targets.' Climate change adaption and mitigation 'requires deliberate, evidence-based decisions in the short term, to enable our long-term, well-planned adaptation approach, including how, and where, we deliver assets and services. GWRC will ensure climate impacts are included in our assessment of options when making decisions'.

external operating environment such as key partner and stakeholder expectations, our legislative requirements and economic constraints.

GWRC's Asset Management Policy sets our framework for consistent and methodical asset management planning.

Governance and organisational structure

Our governance structure ensures appropriate oversight, and a methodical approach is employed to our asset management activities and decision making. A key facet of our asset management approach is maintaining a clear alignment with our strategic priorities. A robust framework of responsibilities and controls are in place to ensure our asset management decisions align with our strategic priorities.

An overview of the public transport responsibilities and governance roles within this structure are set out in Figure 15.

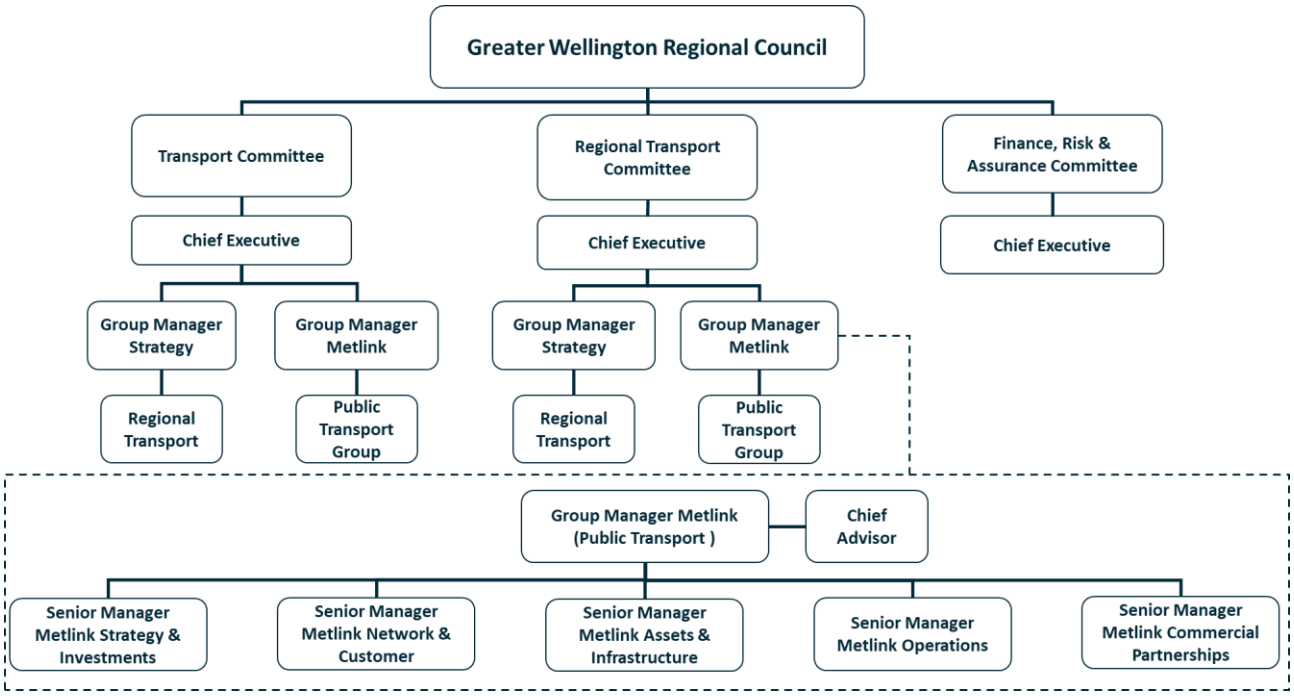


Figure 15: Public transport responsibilities and governance structure

GWRC's Regional Councillors, Regional Council, and Metlink governance

Regional Councillors

Our regional councillors expect GWRC to employ good asset management processes so that its assets deliver the desired outcomes for the communities the regional councillors serve, at least lifecycle cost.

GWRC's asset management governance structure and processes provide assurance to its regional councillors by communicating underlying planning assumptions, the demand drivers, and the consequences of investment decisions, the linkage between GWRC's strategy, strategic priorities and the levels of service required, the costs of projects required to maintain levels of services, and the risks associated with our assets and how those risks are mitigated.

As GWRC is responsible for a wide range of strategies, plans, and functions, our regional councillors need to have a clear understanding of current issues, while being efficient and effective. To achieve this, GWRC has established nine committees and one subcommittee that have specific purposes and responsibilities. The committees responsible for public transport are the Transport Committee, Regional Transport Committee, and the Finance, Risk and Assurance Committee.

Transport Committee

The Transport Committee is a committee of GWRC Regional Council, comprising of thirteen councillors. It oversees the development, implementation and review of GWRC's strategic direction and policies for transport and mode-shift and provides input into joint transport-related projects and initiatives. It also ensures that transport programmes promote a thriving environment, connected communities, and a resilient future for the region.

The Transport Committee is responsible for the preparation of the Wellington Regional Public Transport Plan.

Regional Transport Committee

The Regional Transport Committee is comprised of two persons who represent GWRC, one person who represents each of the eight territorial authorities of the region, one person who represents Waka Kotahi NZTA, and one person who represents KiwiRail. It promotes the objectives of the Land Transport Management Act 2003 within the region, linking it to other regions of New Zealand and other transport systems.

The Regional Transport Committee is responsible for the RLTP and as such sets the vision for the Regional Public Transport Plan.

Finance, Risk and Assurance Committee

The Finance, Risk and Assurance Committee monitors, evaluates, and reports to GWRC on its finance, risk and assurance management policies, systems and processes.

GWRC

GWRC promotes the region's liveability by ensuring the region's environment is protected while meeting the economic, cultural, and social needs of the region. Its

specific responsibilities include environment management, flood protection and land management, provision of regional parks, public transport planning and funding, and metropolitan water supply.

As part of providing public transport, GWRC is responsible for ensuring the delivery of a safe, accessible, reliable, and environmentally friendly transport system, including public transport in the region at least cost to the regional ratepayer. GWRC's Chief Executive is responsible to the thirteen Wellington regional councillors to ensure the region's asset management activities and investments contribute to GWRC's vision of an extraordinary region that has a thriving environment, connected communities and a resilient future.

Metlink

The General Manager Metlink is accountable to GWRC's Chief Executive for our public transport asset planning and investment decisions. Within Metlink, we maintain organisational roles, and responsibilities that are consistent with implementing our vision and strategic priorities.

Our team responsibilities for asset management decision making within Metlink are:

The **Strategy and Investment** team provides strategic management and guidance by working with others to set priorities, focus energy and resources, strengthen operations, ensure that staff and other stakeholders are working toward common goals, clarify intended outcomes/results, and assesses and adjusts the Group's direction in response to a changing environment and in line with the RPTP. The Group:

- leads the public transport strategic planning, investments, policies and business advisory, including Council and local government requirements, as well as strategic insights.
- provides strategic management and guidance by working with others to set priorities, focus energy and resources, strengthen operations, ensure that staff and other stakeholders are working toward common goals, clarify intended outcomes/results, and assesses and adjusts the Group's direction in response to a changing environment and in line with the RPTP.
- includes the critical function of long-term planning for public transport investment needs. Focuses on the development of robust business cases for funding, benefit realisation monitoring and managing the co-funding relationship with Waka Kotahi NZTA.
- is accountable for business development, exploring new avenues of activity and seeking opportunities to increase revenue. They provide strategic commercial

advice and assurance to support strategic decision-making and for policy formulation and delivery.

The **Network and Customer** team is accountable for the design of the network and services to be delivered, in consultation with the Operators, ensuring a robust business case is made for change, and design is aligned to strategy and data analysis, including customer experience data. This function ensures that the services, provided through our business partners, are suited to the needs of the customers, and are in line with our commercial agreements. They examine all activities, infrastructure, communication, people, and material components involved in services to improve both quality of service and interactions between the provider of the service, the Group and its customers. It ensures that design changes can be executed effectively and efficiently within commercial constraints, in a fully multi-modal manner.

The **Assets and Infrastructure (A&I)** team is accountable for building, managing and maintaining assets and infrastructure, including Metlink's technology systems and data, to support an integrated network of public transport. This includes contractual oversight of the rail network access, including the metro opex and capex spend and framework.

The objective of the function is to provide the best value level of service for the budget available. It includes the management of the entire life cycle—including design, construction, commissioning, operating, maintaining, repairing, modifying, replacing and decommissioning/disposal—of physical infrastructure and assets. The function also ensures that assets and infrastructure are built and maintained to Group strategy, design, regulatory and contractual requirements to ensure an integrated public transport network that is accessible and meets customer and stakeholder needs and strategic goals.

This group is also accountable for the AMP and is our Group's Centre of Excellence when it comes to project management and coordination, establishing and monitoring the frameworks, disciplines, and tools we use to deliver our projects.

The **Operations** team have the primary relationship with each of our operators, across bus, ferry, rail and Total Mobility and are accountable for delivering service to customers. They do this by maintaining close and effective working relationships with the Operators to ensure that the operation of public transport conforms to contracted services and performance levels. The function is accountable for operational planning and improvement, including business continuity and disaster recovery planning. They focus on customers and working with Operators on improving services and their delivery. They work across service delivery for all our current modes – Bus, Rail, Ferry and Total Mobility. This group ensures effective monitoring and reporting on bus and rail contracts is undertaken (KPIs, annual planning requirements), and ultimately actioned.

The **Commercial Partnerships** team function is to develop consistent commercial strategies and frameworks to work with our partners in order to drive future operational and cost performance and retain effective partnership relationships with operators and suppliers. They set the commercial framework for Metlink and ensure robust best practice management of a complex commercial and contracting regime. They work closely with other Metlink teams to ensure critical information is provided to drive public transport commercial strategy development, business planning and evaluation.

Metlink's A & I Asset Management System and documentation

Our asset management system comprises our wider organisational strategic framework and Metlink's asset management documentation. Critical inputs into our asset management system include stakeholder expectations and requirements, including levels of service, and GWRC's organisational objectives and plans.

As an activity group of GWRC, our asset management decisions and day-to-day activities are aligned with and take account of GWRC's strategic framework, priorities, and direction. These guide our asset management decisions, activities, and expenditure to ensure we contribute to GWRC's vision, purpose, and community outcomes.

Our asset management approach is documented in a hierarchical structure that links and aligns GWRC's and Metlink's organisational vision and strategic objectives to our asset strategies and day-to-day activities, through our ***Strategic Asset Management Plan (SAMP)***.

The asset management documentation comprises a SAMP, Asset Management Framework, Portfolio Management Plans, and Project and Programme Delivery Plans. The AMP is published annually.

The key elements and documents within our asset management system are shown in Figure 16.

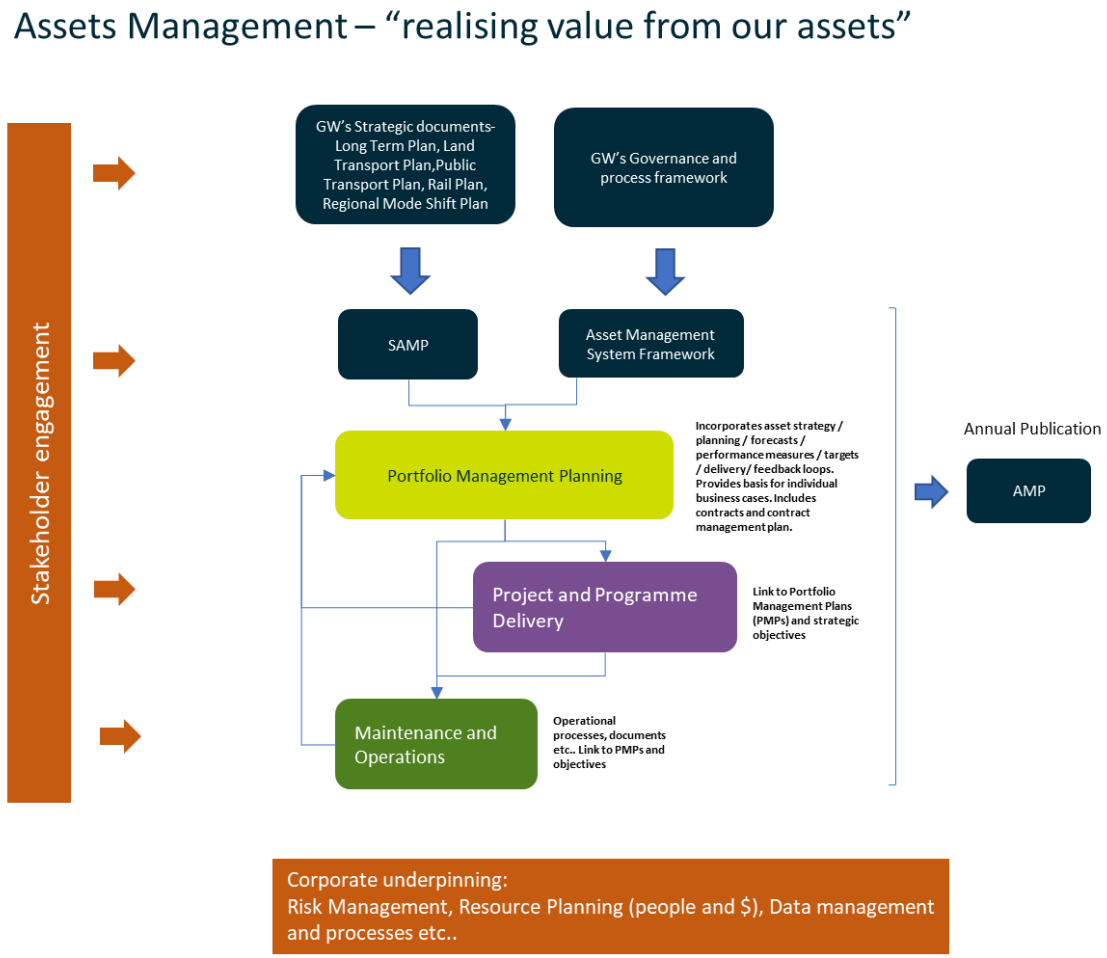


Figure 16: Key elements and documents within the A&I team's asset management system

Asset Lifecycle approach

To realise value from our assets, we employ a lifecycle approach to the management of our assets. This involves all stages in the management of the asset, from the conception of the need for the asset, to acquiring the asset, and then operating, maintaining, refurbishing, replacing and then either divesting or disposing of the asset, including managing any post disposal liabilities.

GWRC's strategic priorities drive our asset lifecycle management, which in turn influence timing and quality of maintenance, refurbishment, and renewals. We maintain our assets until they reach the end of their useful lives, when they are refurbished or replaced. When determining an asset's useful life, we consider age, condition, performance, customer service, growth and changing demands, criticality and risk, and ongoing maintenance requirements.

The ownership of the assets that make up the public transport network is a complex model. As such, GWRC's asset management role and practices are scaled as appropriate to the situation. Where we do not own the assets that are fundamental to our service delivery, we ensure there are appropriate contracts and arrangements in place to manage our service risk from asset degradation and configuration. This requires a contract management and relationship management model that aligns as much as possible to our own practices and delivers the outcomes we are seeking for our customers.

Our methodical lifecycle approach means we consider lowest whole of life cost, rather than short term savings, when making decisions. Taking a lifecycle approach to our planning also assists us in making our assets and programmes of work more sustainable and environmentally friendly. For example, integrating whole of life carbon thinking when planning and delivering our infrastructure assets is a practical approach we are taking to achieve our vision of a low carbon public transport network.

Our asset management approach reflects our lifecycle activities, encapsulating the main activities and information flows within our asset management value chain.

Figure 17 shows our asset lifecycle activities.

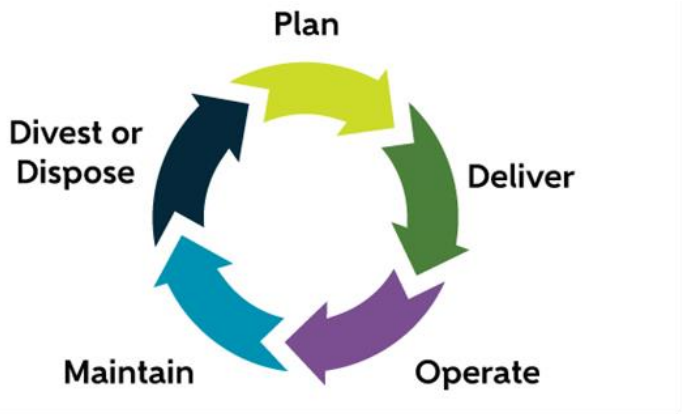


Figure 17: Our asset lifecycle activities

Further detail of our asset lifecycle activities is provided below.

Planning. Our planning lifecycle stage consists of several interrelated activities, to ensure investments deliver the right service, at the right cost, and within acceptable risk tolerances. This requires understanding asset management drivers, identifying, prioritising, and integrating options, and estimating costs. Decisions are made within the context of our overall strategic priorities.

Deliver. Throughout the deliver lifecycle stage our objective is to safely, and cost-effectively, deliver our programmes of works. This requires us to continually challenge

and improve our project planning, project management, and delivery skills to deliver the required levels of service.

Operate. During this stage, we operate our network to ensure we meet our levels of service.

Maintain. Throughout the maintain stage, we proactively maintain our public transport assets to ensure they remain safe, secure, and reliable.

Divest or dispose. Our assets that are surplus to requirements will be disposed of. Our criteria for determining asset disposal include underutilisation, obsolescence, provision exceeds required levels of service, replacement before predicted economic life, life expired rolling stock retired if remanufacture is not economically viable, uneconomic to upgrade, policy changes, service provided by other means such as private sector involvement, and potential risk of ownership such as financial, environmental, legal, and social risk.

Asset information

Robust asset knowledge and information is crucial to good asset management as it enables evidence based- decision making. Our knowledge of our assets and forecasting capability has continued to grow. Our emphasis on asset data for use in investment decision making has resulted in our focus to improve our asset data quality so that our systems, processes, and data are sustainable, robust, and fit for purpose. As part of this we are in the process of implementing a new asset management information system, Ngātahi.

Ngātahi our asset information system is used to support the development of our asset management plans. Ngātahi allows our field staff to enter asset data at source. While out in the field, our field staff can update asset condition ratings, update asset records and attributes, record asset defects, and creating new work orders.

Our asset information is an area for continuous improvement.

Industry standards

We are committed to providing a safe and environmentally sustainable public transport network in a way that complies with industry standards. Our asset management decisions account for:

1. **Requirements for Urban Buses in New Zealand (RUB).** The purpose of the RUB is to standardise urban bus requirements across regional councils and Auckland Transport to create efficiencies and improve the usability and accessibility of buses for all customers. It documents the standards for design and performance of the bus fleet, access and seating configuration including priority seating and luggage storage, facilities for passengers with impairments, safety and security, and

internal, external and operational communication. The RUB is currently being reviewed.

2. **New Zealand Public Transport Design Guidelines (Guidelines).** The Guidelines are being developed collaboratively by Waka Kotahi NZTA with an industry Reference Group. The industry Reference Group members are from all over New Zealand, reflecting a range of contexts and perspectives. The principles of the Guidelines were created to encourage the public transport system is consistent in design, accessible, safe, affordable, operationally efficient, support the move from private vehicle to public transport, and positive urban design.

3. **National Rail Safety Standards (NRSS).** The objective of the National Rail System Standards is to provide a generic framework for the management of safety and change within the Rail Safety System (RSS). It is applicable for all activities involving the operation of Rail Service Vehicles on the National Rail System and is designed to meet the requirements set out in the Railways Act and the Land Transport Safety Authority document "Rail Safety Licensing and Audit Guidelines." The NRSS covers safety management, health assessment of rail safety workers, risk assessment, occurrence management, mechanical engineering interoperability, rail operations interoperability, audit, document control, crisis management, and heritage vehicle and train management.

Continuous Improvement

We are committed to continually improving our asset management approach and look for ways to improve all aspects of our asset planning and management. As part of this we have sufficient rigour in our processes and systems to ensure there are feedback loops between delivery and strategy/planning to enable continuous improvement.

The Asset and Infrastructure Asset Management Framework (AM Framework). sets out our asset management system and processes. As part of this we have produced a Strategic Asset Management Plan and an Asset Criticality Framework. We have aligned our AM System to the international standard ISO 55000 suite of documents for asset management.

Going forward we are continuing to evolve and strengthen our asset management approach. As part of this we continue to:

- strengthen our cost estimation processes
- improve our data driven decision making including improving and cleansing existing data and capturing new data
- leverage the functionality of our new asset management system, Ngātahi, including implementation of asset health modelling for specific assets
- use risk and criticality in our decision making where necessary and practicable.

Our Asset Class Plans

Our Asset Class Plans

This section describes our asset management approach, strategic objectives, risks, plans and financial expenditure forecasts for the assets covered by this AMP. We have categorised these assets between three categories of portfolios. These are Rail Services, Bus and Ferry Services, and Customer Insights and Assets. These three asset portfolios are documented within seven asset class plans. These are Rail Rolling Stock, Rail Station Infrastructure, Rail EMU Maintenance Depot, Bus and Ferry Customer Facing Assets, Bus and Ferry Network Enabling Assets, Bus Fleet, EV Charging and Depot, and Customer Insights and Assets. Each of these are described below.

Rail Services Overview

The Rail Portfolio consists of:

- Crown owned rail network
- GWRC owned rail rolling stock,
- GWRC owned station infrastructure
- GWRC owned rail maintenance depot.

Our rail network consists of the Johnsonville, Kapiti, Hutt Valley (including Melling), and Wairarapa passenger lines. With the recent funding approved, we will be expanding the rail passenger network to Palmerston North on the Manawatu Line in approximately 2029. It provides a transit system that delivers vital support for the significant commercial, government, and professional service industries in our region.

GWRC's subsidiary, GWRL, took ownership of a significant number of the rail assets in 2011. Transdev is our contracted rail operator for the region. Since 2011, we have invested significantly into our rail assets and network to improve the infrastructure and services.

Approximately 75 percent of our region's population lives north of the Wellington CBD. Our rail network provides high-capacity, long-distance, time-competitive commuter services connecting key urban areas across the region to Wellington's CBD.

With ever-increasing demand on our rail services, our overarching objective is to provide a safe, reliable, accessible, low carbon and resilient rail service. We achieve this by having:

- sufficient rolling stock capacity, which is safe, comfortable, available, well maintained and reliable to meet forecast peak customer demand
- clean, functioning, stations with sufficient shelter, and seating capacity for the projected number of customers
- relevant and timely information at our station and providing a safe environment with uniform lighting, and good CCTV coverage
- Bike parking facilities which are sufficient and available at all stations
- Park and Ride is managed so that capacity is at 85% peak occupancy by 9am on a typical business day
- sufficient capacity at the rail maintenance depot and maintained plant to maintain the required number of trains.

Expenditure

The rail work programme and corresponding expenditure in this AMP is based on identified needs and is derived from the expenditure in GWRC's 20234-2054 Long Term Plan (LTP) and Regional Public Transport Plan (RPTP). At the time of writing, we have not received clarity on funding from the National Land Transport Fund (NLTF). If the funding from the NLTF changes from that allowed for in the LTP, the investment plans presented within this AMP will be reviewed and re-prioritised.

Over the 30-year period covered by this AMP, our total forecast expenditure for rail is $13.00b.

The total capital forecast for rail for the same period is $10.974b. This includes:

- **$2.19b of capex renewal expenditure** including $1.3b on the KiwiRail Network ($765m should be 100% Crown funded due to back log renewals), $112m on rail infrastructure, $7m on rail depot infrastructure and $757m on rolling stock
- **$8.78b of capex improvement expenditure including** $7.6b on the KiwiRail Network (100% Crown funded), $365m on rail infrastructure, $131m on rail depot infrastructure ($46m funding from the Crown) and $739m on rolling stock ($380 funded from the Crown).

Over the 30-year period covered by this AMP, our total opex forecast for rail is $2.027b. This comprises rates, leases, insurance, electricity, and maintenance. The rail portfolio opex is forecast to steadily climb as patronage increases over the next 30 years. The most notable change within the opex forecast is the proposal to cancel the locomotive hook and tow lease arrangement with KiwiRail for the Wairarapa services in 2029. The hook and tow locomotives will be redundant once we have the new multiple units, low/zero emission fleet operating on this line. Some of these costs will be transferred into maintenance costs of the new electric multiple units (EMU) fleet.

Figure 18 shows our rail opex forecast.

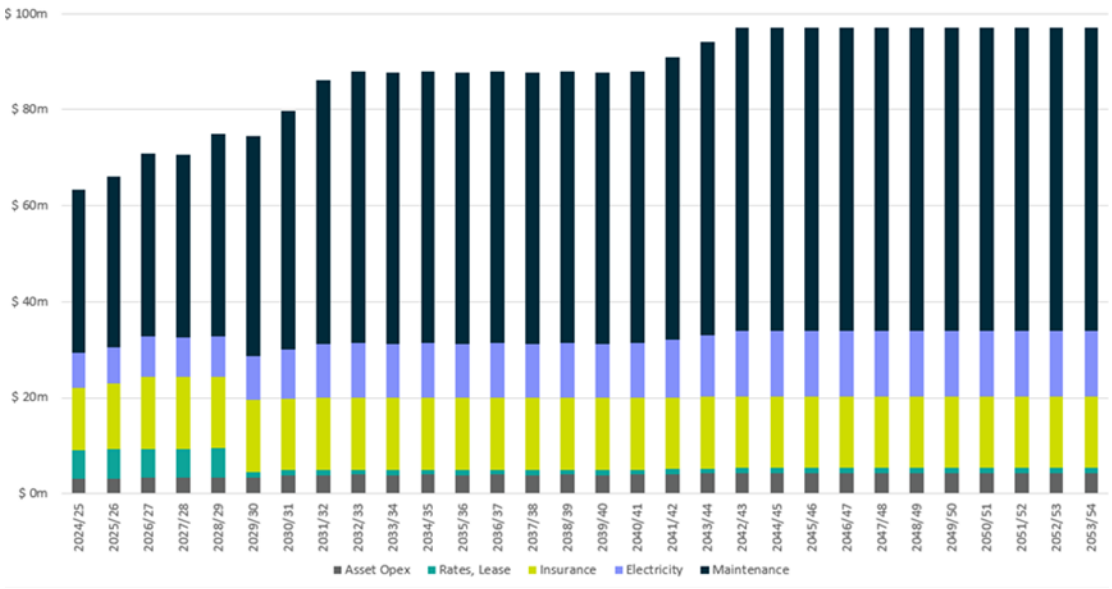


Figure 18: Rail opex forecast

Figure 19 shows our rail capex forecast.

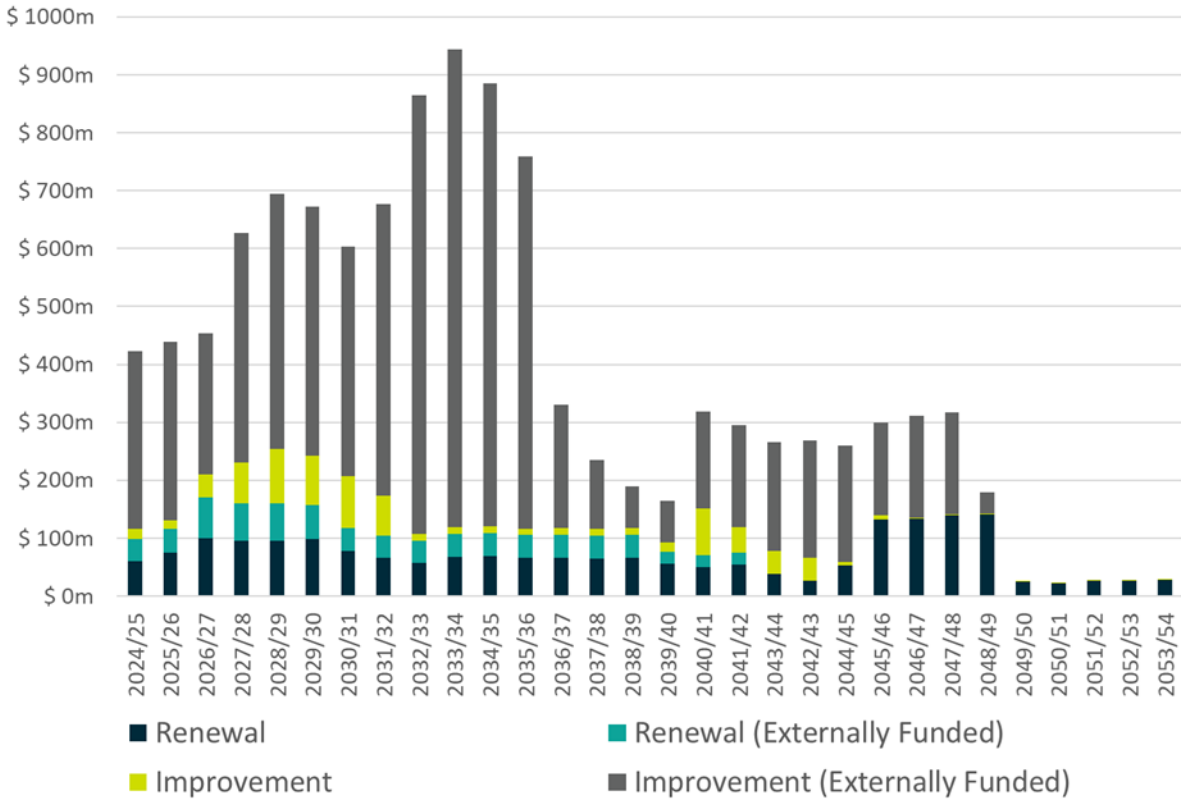


Figure 19: Rail capex forecast

The significant capex investment is required, particularly in the first decade, to increase the attractiveness of public transport relative to driving, reduce public transport emissions by decarbonising the fleet, continue to improve passenger experience across all aspects of our network, and maintain and improve access to public transport for all.

The key areas of investment are:

1. Improvements to rail station infrastructure facilities, with a particular focus on customer experience. This includes increased shelter and improvements in facilities while passengers wait for trains, improved connections between the stations and the community such as improvements to Park and Ride, bicycle storage facilities, and improvements to paths, lighting, security, and general accessibility. For more detail refer to the station infrastructure asset class plan.

2. Renewal of the carriage fleet with a low/zero emission fleet for additional capacity and service frequency on both the longer distance Wairarapa and Manawatu Lines. Additional expenditure is required to boost the capacity and service frequency of the suburban services operating on the current electrified network, particularly on the Hutt and Kapiti Lines to drive a move from private vehicle to public transport and reduction of transport emissions.

3. KiwiRail network improvements which are critical for achieving a fit-for-purpose metro rail network, and capacity enhancements to enable the network capacity for service frequency increases, to deliver increased public transport journeys, and the passenger vehicle distance travelled targets.

Wellington Strategic Rail Plan (Rail Plan)

In July 2022 GWRC endorsed the Rail Plan (Rail Plan) which has further broadened the 30-year investment plan that is outlined within this AMP.

The Rail Plan identified the following fundamental problems that need to be addressed through investment to enable the objectives of the rail system to be realised:

- **Inconsistent customer journey experience and limited rail system capacity.** This results in the network being constrained, which prevents achievement of growth and environmental obligations.
- **Current infrastructure is not capable of safely accommodating additional trains.** This restricts the options available to accommodate future demand.
- **The condition and configuration of the rail network makes it vulnerable to service disruptions.** This has a flow on impact onto the wider transport system.

Addressing these issues will enable us, and our regional and central government partners, to achieve a vision of a safe, customer focused, and efficient rail passenger service to drive the region's economic development and social wellbeing in an environmentally and socially sustainable and resilient manner.

The Rail Plan preferred programme delivers a 'fit for purpose', resilient, and safe rail system. The preferred programme enhances customer experience which encourages public transport use, and supports the capacity needed to meet and drive high patronage growth, by providing:

- highly connected stations in communities where people work, live, play and learn
- stations that make any wait both pleasant and productive
- frequent services that are faster and more convenient than by car
- reliable services that recover quickly from disruption
- links that facilitate convenient connections for national freight customers
- infrastructure and safety systems that enable transport without undue conflict.

The programme includes a wide range of improvements including:

- **Station access improvements** to make active and public transport more attractive as access modes, which will support first and last mile accessibility, reduce the reliance on private vehicle and park and ride in line with zero carbon objectives, and support intensification near stations as envisaged by the RGF and NPS-UD.

- **Improvements to all aspects of station amenity** across the network, including to accessibility, shelter, and information, which will ensure that accessibility obligations to disabled customers are met, that the waiting and overall customer journey experience is first-class, and that it is attractive to new customers wanting to use public transport. These improvements will support increased at-station transit-oriented development where feasible.

- Progressive **service frequency improvements**, from the current 20-minute peak frequency to a 15-minute, then 10-minute, and finally 6-minute peak (turn up and go) frequency at most stations on the Hutt and Kāpiti lines, along with an improved 15-minute off-peak frequency within the electrified area and significantly improved service levels on long-distance services, which will provide better travel options for customers, support the region's growth, and deliver the capacity needed to drive and accommodate a move from private vehicle to public transport.

- Supporting **electric multiple unit (EMU) fleet expansion** to enable the higher frequencies, and replacement and expansion of the mixed and obsolete long-distance Wairarapa and Manawatū train fleets with new low emission trains to reduce rail emissions and provide system bridging capacity in first decade.

- **Network resilience and operational flexibility upgrades**, including improvements to slopes, bridges, culverts, track infrastructure, areas subject to sea level rise and storm surge, and operational patterns and maintenance, which will make the Wellington rail system safer and more resilient, particularly in the face of climate change, and ensure that it can recover quickly when events occur to minimise customer impact.

- **Wellington throat capacity improvements**, including a fourth main to enable the operational separation of Hutt and Kāpiti services, northern access to EMU stabling, and separated access to the Wellington freight terminal, which will significantly reduce conflict between passenger and freight services and improve network and service resilience and reliability.

- **Full duplication between Pukerua Bay and Paekakariki** (North-South Junction), a key single-track constraint with several tunnels, and addition of a third main in the Porirua-Tawa area, which will enable higher passenger frequencies and improve service resilience and reliability on the Kāpiti Line. This will make rail a more attractive travel option on that line, where population growth is expected to be highest, and ensure continued freight access to the network as passenger frequencies increase.

- **Duplicated approach to the Waikanae Station**, including a bridge and second platform, which will reduce conflict between passenger and freight services, improve service resilience and reliability, and enable higher passenger frequencies on the Kāpiti and Manawatū lines.

- **Network resignalling**, which will remove restrictions on the number of peak hour services, safely enable future frequency improvements, and improve operational flexibility, resilience, and reliability.

- **Traction power upgrades**, including additional substations and wider enabling power network upgrades, which will overcome current limitations and enable higher future train frequencies.

- **Rail network segregation** at all places where reasonably practicable, including improved fencing and grade separation of pedestrian and vehicle level crossings, which will significantly improve safety and the experience of surrounding communities as frequencies increase.

- **Continuous improvement of systems, processes, and capability**, including improved asset management.

The preferred programme has a benefit cost ratio (BCR) range of 1.1 to 1.5 (with a sensitivity range of 0.9 to 1.8), with the level of capital investment over 30 years. Benefits are split across wider economic (24 per cent), road user (20 per cent), public transport user (19 per cent), land use (18 per cent), rail freight (14 per cent), and other benefits (6 per cent).

The 30-year capital cost is estimated at between $7.3b – $15.6b. Around 85 per cent of capital costs relate to below rail infrastructure (rail network infrastructure and network segregation), and 13 per cent to rolling stock (train fleet expansion and replacement). The balance relates to above rail infrastructure (station, station precinct, and station access improvements).

Risks and uncertainties

The primary expenditure uncertainty within this portfolio relates to:

- uncertainty of the Crown's willingness to fund and deliver its commitment to lift the rail network Infrastructure up to the required / agreed standard of serviceability. This is particularly affecting the rail network resilience (eg. slope stability, seismic strength), safety (eg. signalling system, level crossings, slope stability), overall network performance (eg. Temporary Speed Restrictions due to catch up renewals), renewal deliverability capability and ultimately asset management maturity.
- funding allocation and investment certainty for the significant work programmes
- outcomes of the Metro Rail Operating Model (MROM) review in 2024
- uncertainty within the patronage forecast and its translation into capacity requirements; this is due to Covid impact and also the growth assumptions embodied in the forecast
- KiwiRail network resilience, safety, and overall performance
- cost uncertainty due to escalating costs.

Rail Services asset class plans and overview

The rail services asset class plans describe, in more detail, our asset management approach for our rail assets. These are:

1. Rail Rolling Stock
2. Station Infrastructure
3. Rail Maintenance Depot

These asset class plans describe the strategy, asset characteristics, management approach, and expenditure profile.

The KiwiRail Network Overview provides the background and current context of the KiwiRail Network which we operate our rolling stock on.

Rail Network Overview

Background

KiwiRail owns and manages the rail network on which our rolling stock operates. The rail network includes track, signals, telecommunications, network control, overhead traction power system, station platforms, some structures (bridges and tunnels), slopes and drainage, and level crossings.

Through the Wellington Network Agreement (WNA), GWRC pays a charge to operate on the rail network. The WNA adheres to the MoT's policy, the 2009 Metropolitan Rail Operating Model (MROM). The intent of MROM is to provide a framework for planning, funding, ownership, procurement, and operation of metro rail passenger services to achieve value for money and strong customer service. Under MROM:

- The Auckland and Wellington regions (now Auckland Transport (AT) and GWRC respectively) are responsible for planning, specifying, and purchasing metropolitan rail services.
- KiwiRail is responsible for providing rail network infrastructure such as track, overhead power supply, signals, and platforms.
- WNA's contractual arrangements are agreed between KiwiRail and AT, and GWRC relating to access to the rail network and use.

At MROM's inception, the Crown recognised that the rail network was in a state of 'managed decline' and required a series of 'one off' investments to lift the rail network to an agreed serviceable condition. GWRC, through the WNA, funds the ongoing steady state operating costs, including renewal of life-expired assets at the optimum time with a modern equivalent asset to sustain the safe and efficient operation of the Wellington Network.

MROM is being reviewed by the Ministry of Transport in mid to late 2024, with sector stakeholders involved.

KiwiRail's management of the assets in the Wellington Network can be categorised into four areas: Maintenance, Operations, Renewals, and Improvements.

Maintenance

KiwiRail is responsible for maintaining the network assets to recognised industry standards. These standards have been developed over many years. Maintenance of the assets by KiwiRail includes, but is not limited to:

- cyclical inspections (i.e.: track inspection, bridge inspections, overhead traction power)
- maintenance activities (i.e.: greasing or lubrication points)

- Minor repairs
- Faults or emergency activities

Operations

KiwiRail along with Metlink's operator, Tranzdev, must ensure the Wellington rail network performs safety and efficiently. KiwiRail operation's includes:

- KiwiRail Management
- KiwiRail Network Control Centre (signallers etc)
- traction electricity
- performance
- insurance
- renewals

Current work programmes and Renewals

KiwiRail is responsible for renewing (or replacing) the rail network assets, at least whole of life costs, once the asset is no longer able to perform to the level required to deliver its intended service.

WNA includes funding for renewals. These are the costs for KiwiRail to replace life expired assets at the optimum time to sustain the safe and efficient operation of the Wellington Network. This is defined as Renewal Services under the WNA. Such renewals are "steady state" renewals. These renewals are required to deliver the current metro timetable.

Renewals that have not been replaced or renewed at the optimum economic time can fall into backlog, for which there is no funding provision under the WNA. Under MROM, these attract Crown funding to replace or renew these assets. So far, there are seven separate Crown funded programmes of work designed to replace life expired assets and increase resilience. These have a dedicated management and funding structure[6] and are referred to as the Wellington Metropolitan Upgrade Programme (WMUP). *Table 8* provides a summary of the WMUP.

[6] These are part of the "Transitional Rail" activity class through Waka Kotahi NZTA directly to GWRC as an Approved Organisation at 100% FAR. This has been discontinued in favour of the RNIP process.

Table 8: Summary of the WMUP

WMUP Programme	Scope Overview	Funding
WMUP I - Complete	**Renewal of end-of-life infrastructure** conducted between 2011 and 2018.	Crown funded direct to KR (Commence 2011)
WMUP II – Near Complete	**End of life Traction face renewals** – including Overhead lines/poles and 3.3 kv signal power renewals Safety focused renewal to avoid failure of life expired wooden traction poles.	Single Stage Business Case (submitted Nov 2016) Initially Crown funded direct to KR, however budget top up has been agreed from NLTF (Via GWRC to KR as Transitional Rail)
WMUP III – In Progress	**Catch up track and civil renewals** – including Wairarapa Line (WL) track upgrades, Tunnel track renewals, re-sleepering, slope stabilisation and bridges. Focused on bringing the Wairarapa Line, and other key assets up to a 'fit for purpose' standard.	Single Stage Business Case (submitted Nov 2017) NLTF (Via GWRC to KR as Transitional Rail activity class)
WMUP IV- In Progress	**Capacity and resilience upgrade** – including Trentham double track, Porirua Area Enhancement (PACE) and additional substations or upgrades. (NB: Substations have been moved to a separate BC – awaiting funding) Enabler to implementing increase peak rail service frequency – commonly referred to as Rail Scenario 1 (RS1), from the Wellington Regional Rail Plan.	Single Stage Business Case (submitted Nov 2017) NLTF (Via GWRC to KR as Transitional Rail activity class)
WMUP 5 – Planning Stage	**Life-expired assets** - Signal improvements and automatic train protection Address life expired assets and enable signalling system to meet modern safety standards, while also enhancing network capacity.	Indicative Business Case Completed in early 2021. Detailed Business Case about to commence. Rail Network Investment Programme (RNIP)
WMUP 6a – In progress	**Life expired system** - Wellington Station approach capacity and safety enhancements Critical to removing the rail regulator safety condition, which requires mitigation to reduce the risk of collision in Wellington Station Throat prior to increase the peak service frequency. I.e. required for RS1 implementation	NZ Upgrade Programme (NZUP) - Funding announced Jan 2020 -
WMUP 6b – In progress	Regional Infrastructure enhancements – including WL new signalling and passing loops. Infrastructure improvements to enable deliver a more frequent rail service on the Wairarapa Line, as proposed in the Longer Distance Rolling Stock Indicative Business Case.	Based on Longer Distance Rolling Stock Indicative Business Case – Dec 2019 NZ Upgrade Programme (NZUP) - Funding announced Jan 2020 -

Whilst many of these are underway, these programmes are insufficiently funded to resolve the back log renewal. There is general agreement that the 'steady state' has not yet been reached and further Crown funding will be needed. Since 2017, when much of the WMUP scope was prepared, KiwiRail has identified additional renewals work that need to be completed that fall into the category of 'end of life' or 'deferred' renewals.

Asset risk and performance

In 2017, when the WMUP programme was scoped, the full extent of the renewal requirement was unknown and un-scoped due to limited asset knowledge. The renewals component was not separated into 'steady state' and deferred renewals. Instead, the WNA renewals budget has been the default funder of all additional unfunded renewals work (and any other unanticipated or unfunded budget shortfall).

KiwiRail's delivery of the WMUP programme has been delayed, and the funding is inadequate for the scope originally agreed. Continuous scope reduction from this programme to remain within funding envelopes and new work being discovered continues to put pressure on the only other metropolitan funding stream.

The consequences of this treatment of deferred renewals (or backlog) are:

a) The funding provided to KiwiRail for 'steady state' renewals under the WNA has been used to undertake urgent backlog renewals instead. The steady state renewals are therefore not being done meaning the backlog continues to increase.

b) The backlog of deferred renewals continues to increase and cannot be funded by the WNA. Asset degradation risk and service risk continue to escalate.

c) The deferral of scope from capital programmes has escalated the corrective maintenance spend adding to the network risk.

Both KiwiRail and GWRC recognise the funding under the WNA cannot cover the likely extent of the renewals work required and that the work existed due to the poor health of the assets. KiwiRail has continued to prioritise the renewals component of the network on the 'most' end of life assets whilst it seeks additional Crown funds.

Investment Programme

Figure 20 shows our rail network operational and capital expenditure forecast.

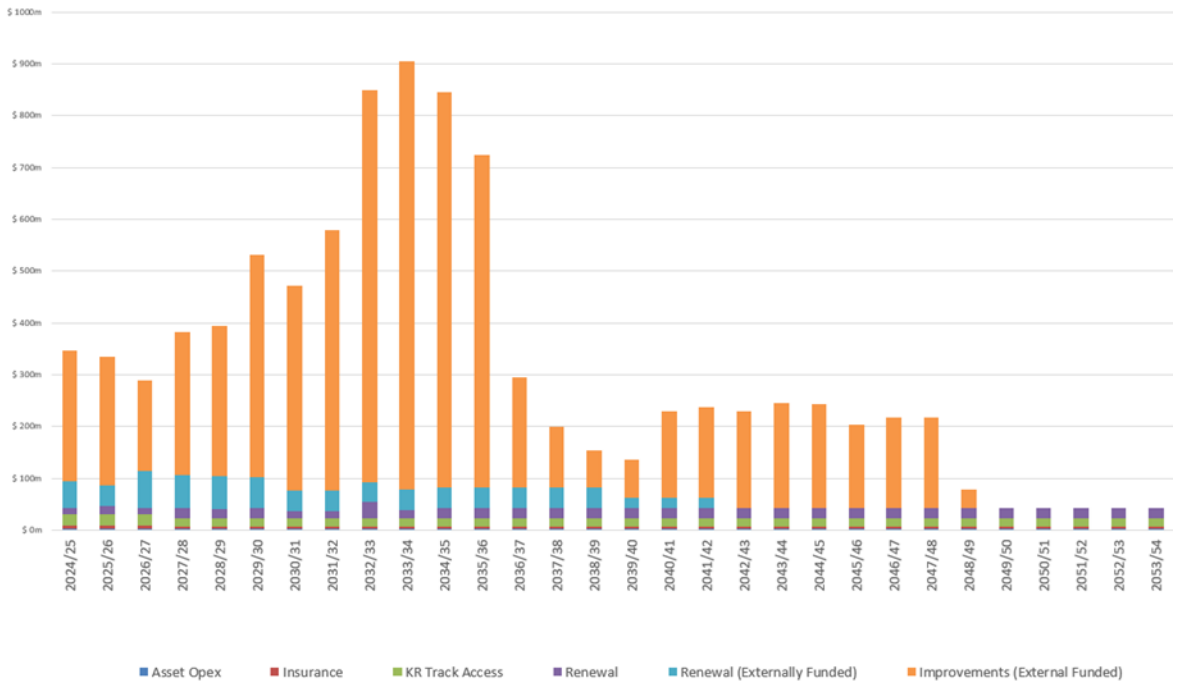


Figure 20: Rail network operational and capital expenditure forecast.

Opex

The WNA is used by KiwiRail to fund network maintenance activities in the Wellington Metro area. This expenditure is opex for Greater Wellington, attracts a normal Funding Assistance Rate (FAR) from Waka Kotahi NZTA, and is included in our LTP and AMP.

Activities included within the budget under the WNA include:

- Network Management Services are the costs associated with the ongoing management of the network and includes network resourcing, insurance, and non-Traction Electricity.
- Network Maintenance Activities including inspections, maintenance, and corrective maintenance.
- Network Control Services are costs associated with the operational aspects of the network and include operation and train control resource, network authorities and access, traction and operations support, and national signal boxes.
- KiwiRail Overheads including all other expenses such as staff and management plans.
- KiwiRail Renewals are the Capex costs to undertake renewal of assets, but as they are not GWRC assets, these costs are treated as Opex for GW.

Insurance (cost to insure the rail network): The cost allocation for insurance is driven by the earthquake risk. From a national rail network perspective, the GWRC catchment

has the highest earthquake risk and a high concentration of network assets and therefore bears the largest share of the national rail network's Maximum Probably Loss. This results in Wellington rate payers being allocated a disproportionate portion of the National Network Insurance premium. KiwiRail negotiates the rail network insurance on a national basis. The cost is then proportioned to Wellington Metro and that cost is passed on to GWRC. In 2018, the cost to GWRC for the Wellington rail network insurance was $2.1m per annum. The forecast cost for insurance for the next triennium is $11.8m per annum. GWRC have allocated $5.5m per annum for Network Insurance due to ongoing negotiation with KiwiRail and its insurers.

Traction electricity (use to power the electric trains): There has been a significant uplift in electricity support costs. In 2022, KiwiRail approved a new 5-year agreement for power supply which had an increase of approximately 45% over the previous agreement.

Maintenance (corrective): Due to increasing deferred renewal backlog, there is a material uplift in funding to maintain assets that have reached or are beyond the end of their economic life and are not being replaced as Renewals Services. Additional inspections and light maintenance are now required to keep these assets performing until they can be replaced.

Renewal Services: The steady state renewal capex for the rail network attributable to GWRC as opex (Renewals Services) is forecast to remain at approximately $18m per annum.

Approximately $765m of back log renewals is required to bring the network up to an agreed serviceable standard. The extent to which additional funding is required under the WNA as opposed to Crown funding remains a subject of discussion.

Capex

KiwiRail network improvements, are critical to lift the network to an agreed serviceable standard for a metro rail service to provide:

- a resilient and dependable network
- network capacity to enable sufficient service frequency and capacity to achieve a move from private vehicle to public transport, and the passenger vehicle distance travelled targets.

The large capital improvement initiatives to the rail network assume a 100% Crown contribution. As shown in Figure 20, $7.5b of additional capex improvements are forecast to be required on the KiwiRail Network (100% Crown funded) to achieve the customer experience improvements, a move from private vehicle to public transport, decarbonisation, and growth targets contemplated in the GPS.

These improvements have been included within this AMP as the execution of these initiatives are material to achieving our service outcomes. These initiatives are in addition to those in Table 8 and include:

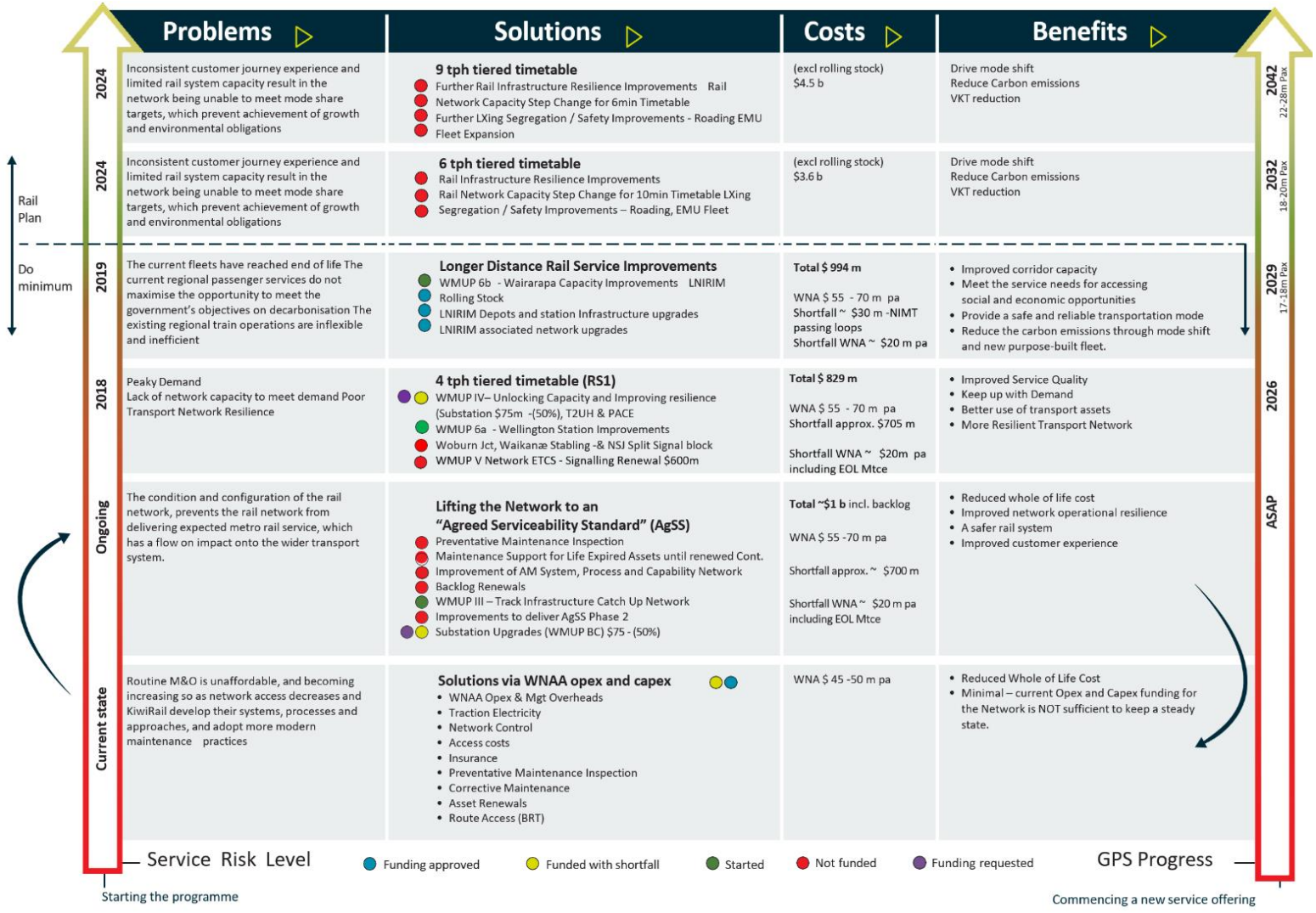
- the current WMUP as shown in Table 8 which are currently funded and underway.
- additional network enabling works to enable the service increases on the Manawatu and Wairarapa Lines for the Lower North Island Rail Integrated Mobility Programme
- deferred renewals (backlog) of approximately $765m to be delivered over approximately 15 years
- level crossing upgrades (including grade separation) to ensure safe and efficient operation of both the rail and roading networks – particular with increasing rail services.
- network capacity enhancements to deliver the outcomes sought within the Wellington Rail Strategic Plan. The key infrastructure constraints for this are:
  - Single track section between Pukerua Bay and Paekakariki – likely tunnel required.
  - Separation of the Hutt and Kapiti Lines as they enter Wellington Station – likely fourth main required.
  - Single track and single platform at Waikanae Station – likely increased duplication and second platform required.
  - Additional track capacity in Tawa basin – likely third main required.
  - Additional track capacity in Hutt Valley - third main or extension of Melling Line required.
  - Resilience Improvements – slope and sea wall improvements to ensure the network is resilient and dependable.

Table 9 provides a pictorial representation of the network improvement activity; it sets out a view of all work programmes for the Wellington Metro Rail Network. It includes all funding regardless of source including Transitional Rail, New Zealand Upgrade, and Wellington Network Agreement. It also includes work that remains unfunded.

The ‘do minimum’ line is the minimum spend we require to manage the service risk and realise the benefits of money already spent or approved. The below ‘do minimum’ line is a pre-requisite to the future programmes of work designed to increase services.

To achieve the “do minimum” line additional and more sustainable funding is required, regardless of source to achieve. This additional funding requirement has been requested via the Rail Network Investment Programme (RNIP) and documented in a ‘Wellington Investment Case’ due in Q2 of FY25.

Table 9: Rail network improvement activity



Rail Rolling Stock Asset Class Plan

This asset class plan describes our lifecycle management approach for our rolling stock assets. Rail rolling stock represents our largest asset portfolio.

Our rolling stock assets consist of:

- 83 Two-car Matangi Electric Multiple Units (EMU)
- 1 EMU driver training simulator
- 24 Wairarapa locomotive hauled carriages (Wairarapa carriages)
- 1 Auxiliary Generator222 (AG222) generator and luggage carriage
- 2 Zephir electric shunt crabs

Strategic Objectives

Metlink's strategic focus areas directly determine how we plan, develop, maintain, and operate our rolling stock assets. Our rolling stock:

- provides the capability to transport our customers to and from each station
- determines the environment which customers experience when travelling to and from each station.

Therefore, our rolling stock assets:

	Support growth by ensuring a safe, comfortable environment for passengers while travelling and enabling services to run at desired frequency.
	Support **Access and Accessibility** by ensuring the configurations of equipment and facilities enable passengers to access in an efficient and safe manner.
	Support **Decarbonisation** by ensuring our rolling stock are available and reliable for people to use which encourages people to use public transport over other modes.

To achieve these outcomes, we have established the following asset strategies that guide our planning for our rolling stock assets. We aim to ensure:

1. Stock capacity and serviceability to meet forecast peak customer demand.
2. Our rolling stock is safe, comfortable, available, and reliable for our customers to use.
3. Our rolling stock is kept clean and sub-components are in a workable and good condition.

The investments outlined in this AMP are focussed on meeting these objectives.

Asset characteristics – current state

GWRC Rail Ltd (GWRL), a wholly owned subsidiary of GWRC owns our rolling stock assets.

Our EMUs are two-car units and are designed to run on all lines in Wellington's 1500V DC overhead electrified system. Each unit is made up of a semi-permanently coupled power car and trailer car. They are of stainless-steel construction and have a low-floor/level boarding section, air conditioning, passenger-operated doors, and an AC traction system with blended regenerative braking. The first EMU entered service in February 2011 and the last EMU in October 2016.

An EMU is shown in Figure 21 below.

Figure 21: Four EMU's

We use our Wairarapa carriages to provide the longer-run train services on the non-electrified Wairarapa line. They are hauled by diesel-electric locomotives provided by KiwiRail, via a hook and tow agreement. The maximum train length used in service is nine carriages.

Our Wairarapa trains include a generator to provide onboard power to the train, and an accessible carriage. All the carriage types are interoperable, which means they can be coupled as required. All passenger carriages are equipped with passenger operated power doors, air conditioning, and a passenger information system.

We have two types of Wairarapa carriages: the Suburban Wairarapa (SW) carriages and the Suburban Express (SE) Wairarapa carriages. Both types were originally early 1970's British Rail Mk II carriages. Between 2007-2010 KiwiRail rebuilt and converted them to be compatible with the New Zealand rail network. During the conversion, bogies were fitted to the carriages.

The level of rebuild for the SE carriages was much less than that of the SW carriages as they were quickly introduced into service in 2010 to increase capacity on the Hutt Valley and Kapiti lines until the introduction of the EMUs. In 2013, accessible toilets were fitted across the SE carriages to make them suitable for use on the Wairarapa line to supplement the SW fleet. They re-entered service 1st of July 2013. The SE carriages

retain many of the original MkII design features including original window configuration, lighting, and high-density airline-style seating.

Figure 22 is an example of our SW carriage.

Figure 22: SW carriage

Figure 23 is an example of our SE carriage.

Figure 23: SE carriage

The AG222 is a generator and luggage carriage; it does not have seating for passengers. It is used to increase bicycle and luggage capacity on scheduled services. It also is equipped with an electrical generator which can be used to supply power to trains if either an SE or SW generator is not available.

Figure 29 is an example of a AG222 carriage.

Figure 24: AG222 carriage

The EMU driver training simulator is a replica of the EMU driver cab. It enables drivers to be safely trained and assessed in a full range of operational environments and situations. This simulator is updated regularly to reflect visual and operational updates to make it as realistic as possible.

'The Zephir 1800E electric crab is a road rail vehicle designed for moving rolling stock within a depot. They have the capability of providing tractive power and braking to a 200-tonne load. Two Zephyr 1800E electric crabs were purchased in 2018 for safe controlled movements of rolling stock within the EMU depot and wheel lathe facilities.

Asset importance

The Wellington passenger rail network forms the backbone of our public transport network. Our rolling stock is a critical component of our rail network and provides a vital passenger transport link across the GWRC region. The provision of modern, safe, and reliable rolling stock connects our customers to their places of work, schools, events, and communities. Realising our strategic goals of a move from private vehicle to public transport, decarbonisation of our public transport fleet, and improving our customer experience depend on modern, safe, and reliable rolling stock.

Our region's prosperity relies on our rolling stock to transport high volumes of commuters into and out of the CBD each day from surrounding communities. Our region's road network does not have capacity for these commuters. When there is an

outage in our rail network, the region's road network becomes heavily congested. Outages on our rail network negatively impacts our customers, who often rely solely on our network to access jobs, education, healthcare, cultural activities, shops, friends, and whanau.

Without sufficient rolling stock capacity, the service we provide would be significantly degraded.

Unreliable rolling stock impacts our ability to deliver the required capacity; this ultimately affects our customer's experience of our service, which in turn reduces demand for our service. Our customers have high expectations for on-time performance and seating capacity. Analysis has shown these factors have a material impact on customer experience and demand for our rail service.

Our EMU driver training simulator is an integral part of driver training for new drivers, refresher training of experienced drivers, and qualification of drivers returning to service. The simulator allows new drivers to learn to drive in a safe and controlled environment and makes it possible to practice techniques and scenarios which are not practical or safe in a 'live' railway environment. The simulator simulates varying weather conditions, degraded modes, and potential hazards (e.g., earthquake, flood, track obstruction).

Population

Our rolling stock consists of seven asset types. The asset types by population are shown in Table 10.

Table 10: Rolling stock asset population

Asset types	Population	Seated Capacity
EMU 1, 2 Car Units	48	147
EMU 2, 2 Car Units	35	147
EMU driver training simulator	1	n/a
SW carriage cars	18	37-64
SE carriage cars	6	40-69
AG222 Cars	1	n/a
Zephir 1800E crab	2	n/a

Age profile and life expectancy

The age of our rolling stock ranges from 5 years to 54 years. Each rolling stock type has a different life expectancy. The expected life, along with the expected timeframe for half-life refurbishments and the end-of life and for each asset type, is summarised in Table 11.

Table 11: Age expectancy of rolling stock

Asset type	Current age	Standard base life	Mid-life refurb due	End-of design life
EMU 1, two-Car Units	12-13 years	30 years	2025-2027	2040-42
EMU 2, 2-Car Units	8-9years	30 years	2028-2030	2045-46
Matangi driver training simulator	5 years	28 years	2030	2047
SW carriage cars	49-54 Years Rebuilt and entered service 2007-08	20 years	Minor refurbishment completed 2023	2027-28
SE carriage cars	49-54 Years Refurbished and entered service 2010	20 years	Minor refurbishment completed 2021	2027-28
AG222 Cars	43 years Refurbished and entered service 2008	20 years	Minor refurbishment Completed 2020	2027-28
Zephir 1800E crab	6 Years	30 years	2032	2048

Figure 25 shows our rolling stock age profile for Matangi:

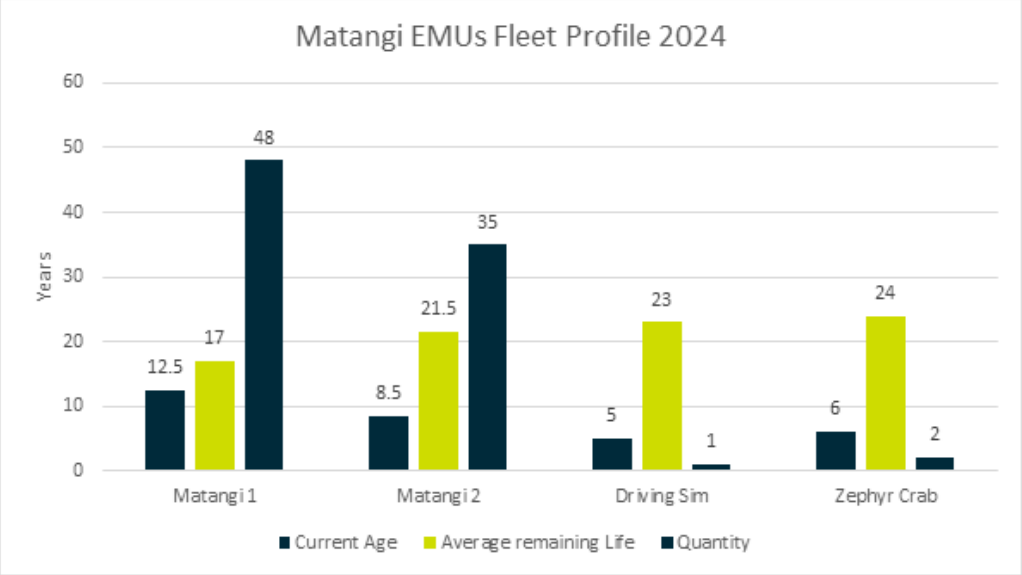


Figure 25: Matangi age and population profile

Figure 26 shows our rolling stock age and population profile for our Wairarapa carriage fleet.

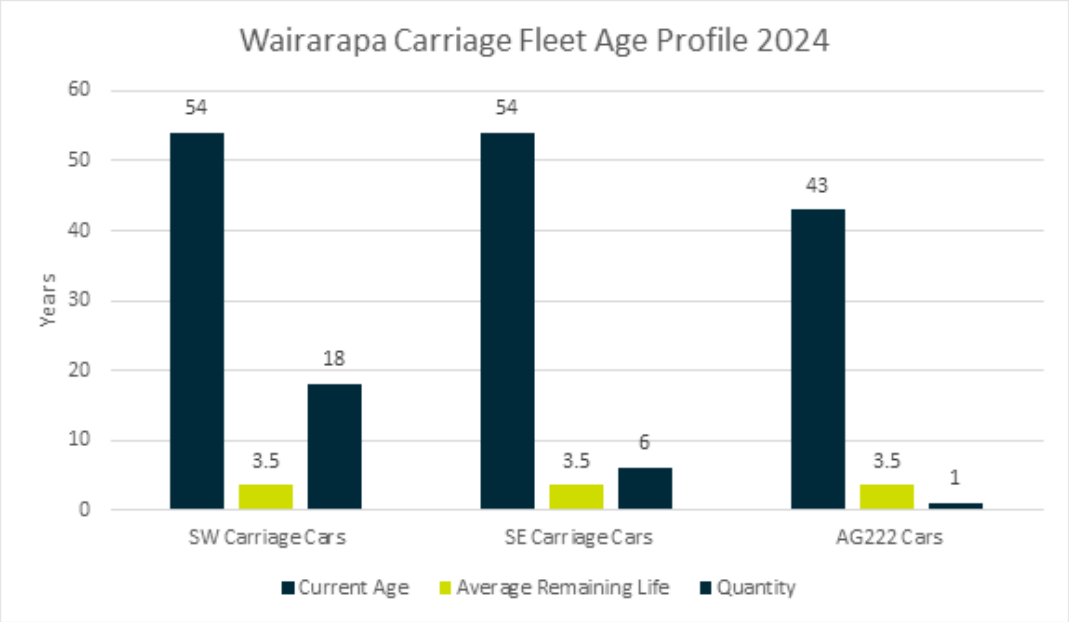


Figure 26: Wairarapa carriage fleet age and population profile

Asset condition

We determine the condition of our rolling stock assets by using the condition grade rating system within the International Infrastructure Management Manual (IIMM). Table 12 shows our condition rating description.

Table 12: Description of condition rating. Left – Internal rating scale, Right-External (WSP) Rating scale

Condition Rating	
Rating	**Description of Condition**
1	Very good condition only preventative maintenance required
2	Good condition: Minor maintenance required plus Preventative maintenance
3	Moderate condition: Significant maintenance required
4	Poor condition : Significant maintenance required
5	Poor condition : Unserviceable

Condition	Score	Description
Very Good	1	• No visible defects • Fully meets service expectations
Good	2	• Occasional signs of early aging, local aging, without jeopardizing performance or function • Minimal signs of wear • Some (slightly) defective or deteriorated component(s) • Minor cosmetic damage or deterioration visible
Fair or moderate	3	• Performance of function occasionally in jeopardy • Moderate defective or deteriorated component(s)
Poor	4	• Increasing number of defective or deteriorated component(s) • Evidence of corrosion/ wear & tear
Very Poor	5	• Ageing is irreversible • In need of immediate repair or replacement; may have critically damaged components • Technically ready for decommissioning • Does not function / meet design or service requirements

Overall, the health of our rolling stock is good. Table 13 below summarises the asset condition across our rolling stock assets.

An independent condition assessment was carried out in 2023 by consultancy WSP and found the Matangi fleet to be in good/very good condition.

The previous internal condition assessment was carried out as a desktop activity due to restricted access to vehicles because of Covid 19. The desktop assessment focused on maintenance records and reported defects logged in the Maximo Maintenance System (MMIS) and Vehicle Service performance reporting.

Table 13: Rolling stock asset condition assessment

Assets	Condition Rating		
	2018 (Internal)	2022 (Desktop)	2023 (External)
EMU 1	2.0	2.5	1.8
EMU 2	1.7	2.0	1.7
driver training simulator	1.0	1.3	n/a
SW	2.9	2.5	2.1
SE	2.9	2.1	2.4
AG222	2.5 (post Minor refurbishment)	2.2 (post minor refurbishment and generator replacement)	n/a
Zephir 1800E crab	1.0	1.3	n/a

The condition is described in more detail below.

EMUs

The EMU 1 fleet has an overall condition rating of 1.8 (good/very good) and the EMU 2 fleet has an overall condition rating of 1.7 (good/very good). The overall operational performance and reliability of the fleet is meeting expectations of a modern fleet.

The EMUs contain multiple sub-systems and components that form the train. Each of these sub-systems have a different expected life, and hence require replacement or refurbishment at different frequencies.

These assets (at the sub-system and aggregated up to provide overall condition rating) are monitored through an internal asset fleet condition review process which is peer reviewed at regular intervals by an external party.

An overhaul/renewal maintenance programme is in place. This is intended to maintain the condition of the vehicle and its sub systems/components throughout the design life of the vehicles. To maximise the efficiency of the heavy maintenance / renewal activities, these are grouped together at three yearly intervals for each unit, with the objective of lifting the condition grade back to the baseline.

The rail partnering contract Includes a detailed Minimum Vehicle Operating Standard (MVOS) to which the operator must adhere. It details the extent of allowable defects and the duration these defects can remain unrepaired. If the vehicle fails to meet this requirement, then it is removed from service for repair. The maintenance programme and the MVOS ensure the EMUs operating in service meet our expectations of reliability, appearance, customer safety, and comfort throughout the life of the asset.

The EMUs safety and customer features are commensurate with a rail vehicle manufactured in 2010 such as low floor accessibility, compliance with BS6855 Class 1B Fire Rating, and GM/RT2100 structural compliance including crashworthiness features such as anti-climb fins, and crumble zones.

EMU driver training simulator

The driver training simulator is in very good condition. It is in a customised training facility with restricted access and is maintained by a dedicated and qualified technician.

Wairarapa carriages (carriages)

The SW & SE carriage fleet condition is monitored through an internal asset condition review. A maintenance programme is in place to maintain the condition throughout the design life of the carriages. This maintenance plan is time and distance-based with heavy maintenance work carried out every 300,000-400,000 kilometres.

To maximise the efficiency of the heavy maintenance and renewal activities, they are grouped together into two key overhaul cycles (half wheel life, and full wheel life), with the objective of lifting the condition grade back to the baseline.

As for the EMUs, the MVOS also details the standard to which the maintenance service provider must adhere for these vehicles and contains the same conditions for when the standards are not met.

Despite their age and the fact, they are nearing their end of life, these carriages have an acceptable condition rating, with the SW fleet having a good condition and the SE fleet with a good-moderate condition. Operational reliability and availability are good.

SW Carriages

The SW carriages underwent refurbishment in early 2023 addressing the passenger facing wear that was evident in the 2018 condition assessment. This programme of work will ensure the carriages will meet their 20-year design life. The work includes corrosion repair of the body shell and repainting, replacing the windows with double glazing units which meet current design standards, concertina rebuild, carpet replacement, HVAC overhaul and performance improvement, and seat refurbishment. The refurbished carriages have a condition of 2.09 and the non-refurbished carriages a

condition of 3; this gives an average overall condition rating of 2.1. Overall, the condition rating was improved due to the recent refurbishment and ongoing heavy maintenance activities.

SE Carriages

The SE carriages underwent refurbishment in 2020/21 addressing the known issues as identified in the 2018 condition assessment. The scope of the refurbishment programme included corrosion repair of the body shell and repainting, replacing the windows with double glazing units which meet current design standards, concertina rebuild, carpet replacement, and seat refurbishment. HVAC overhaul was not included in the scope of work, but minor upgrades may be required before the end of life. The condition of the SE carriages is considered good with a rating of 2.4.

AG222

The AG222 has a condition rating of good. It received minor refurbishment in 2020 as substantial corrosion was identified and removed in the body and doors and rotten timber flooring was replaced. The AG222 is an old vehicle. However, maintenance programmes to maintain bogies, brake equipment, draw-gear, and surface integrity will mean this asset will not reach the end of life until 2027/28.

The generator set Is expected to have a reliable working life of 25,000 operating hours and was replaced in line with the heavy maintenance schedule in 2021.

A specific overhaul and renewal maintenance programme will maintain the condition of the carriages and its sub systems/components throughout the design life. To maximise the efficiency of the heavy maintenance and renewal activities, they are grouped together into two key overhaul cycles (half wheel life, and full wheel life), with the objective of lifting the condition grade back to the baseline.

Like the EMUs and Wairarapa carriages, to ensure the AG222 meets our expectations in reliability, and appearance, as well as safety throughout the life of the asset, the MVOS details the standard to which the operator must adhere for the AG222, and the actions required should that standard not be met.

Zephir 1800E crab

The Zephir 1800E crabs were built between March and May 2017 and are in very good condition.

Overhaul and renewal maintenance programmes are in place which maintain the condition of the vehicle and its sub systems/components throughout the design life of the vehicles.

Asset risk

Rolling stock are critical assets. Whilst the likelihood of losing all our rolling stock at once is very low, there are several risks that have the potential to affect the function or service of our rolling stock assets. These risks manifest across the asset base to varying degrees. We have limited ability to quickly replace any lost or damaged rolling stock as our trains are bespoke and purpose-built due to the narrow-gauge railway 1,500vdc we have in Wellington.

Insurance plays a key role in mitigating the financial risks. Our rolling stock is insured for material damage. To ensure premiums remain cost-effective, we take a Maximum Probably Loss approach.7

The following describes the risks and mitigations to our rolling stock assets.

Environmental Risks

The largest maximum probably loss scenario for our rolling stock assets is a tsunami which inundates the Wellington railway yards where a significant proportion of the fleet is stored between peaks during the day. The rail network on which our rolling stock operates has low resilience to adverse weather and natural disasters; these have the potential to damage our assets and ongoing service. KiwiRail, as the network asset owner, manages these risks with our input.

Such environmental risks include:

- overtopping of the tracks and trains caused by increased wave action and storm surge
- flooding
- earthquakes
- fire
- network slope failure due to historic engineering practices, weather conditions, climate change, and human interaction.

There are a range of Wellington Metro Upgrade Projects that are improving the resilience of Wellington's network to adverse weather and natural disaster. However, further investment is needed, as outlined in the Rail Network Overview

[7] The realistic maximum loss in a single event

Operational Risks

Driver error can lead to vehicle collision or derailment. Our trains are equipped with a range of features such as:

- a driver vigilance device
- over-speed protection
- tripcock devices which apply the brakes in case of signal overrun.

Unpredictable low adhesion track conditions which impede braking is another risk which can lead to 'signal passed at danger' and in extreme cases, vehicle collision. Special grip improving "sandite" machines have been installed in high-risk locations around the network. These risks are actively monitored.

Driver training and awareness is a key mitigation of operational risks that relate to driver training or inexperience. Our EMU driver training simulator enables drivers to practice driving in a range of unusual conditions and degraded modes which better equips them for hazardous conditions.

As ETCS is becoming a global standard for train control systems across the networks worldwide, we are planning to introduce ETCS level 2 to Matangi EMU fleet to enhance the safety of rail operations through the introduction of continuous Automatic Train Protection (ATP), which supervises movement authorities and speed profiles. We plan to introduce ETCS Level 2 across the rail network by 2030/31 – the costs for this retrofit are included within the rail network portfolio, as this forms an integral part of a signalling renewal programme. This project is being led and funded by Kiwirail as a national standard.

Our Wairarapa carriages were designed and built in the 1970's. Although upgraded to meet operational requirements, they are still based on a 50-year-old design. The age profile of these carriages creates several specific risks. These include:

1. Crash worthiness design standards have improved significantly since the carriages were designed. Whilst condition is maintained, the fleet will not perform as well as new rolling stock in an accident. As such, this risk continues to increase with age and increased network issues such as slope instability.

2. Unknown Structural defects due to initial manufacture or rebuild/refurbishment error or degradation in structural materials.

Identification, assessment, and mitigation of these operational risks is ongoing and requires a multi-party approach involving Metlink, KiwiRail, Waka Kotahi NZTA, and Transdev.

Equipment failure and maintenance induced defects

Our rolling stock assets are at risk of equipment failure and maintenance induced defects.

The risk of equipment failure is managed through our maintenance plan. The maintenance plan has been informed by the probability and criticality of risks determined by Failure Mode Effects and Criticality (FMECA). This includes regular inspection of critical equipment and replacement, or refurbishment based on equipment condition or anticipated service life. Unexpected failures and defects are investigated using the Failure Reporting, Analysis, and Corrective Action System (FRACAS) to determine root causes and check and update the FMECA.

Maintenance induced faults are reduced by identifying high-risk maintenance activities and defining the required experience and qualification to undertake the task. In-service maintenance induced defects are also handled by the FRACAS to understand root-causes and prevent recurrence.

Supply chain continuity and obsolescence

A consistent single fleet increases the risks associated with supply chain continuity. Our rolling stock assets rely on maintenance spare parts and consumables which are manufactured overseas. In many cases, the parts are specifically designed for our EMUs and the supplier pool is limited. As such, supply continuity over the 30-year design life is uncertain. To help mitigate this risk, software source code is held in Escrow, and most suppliers have signed Continuity of Supply agreements.

The covid-19 pandemic has increased lead times and made transportation of goods to New Zealand more challenging. This requires more planning and management and increases the risk of material shortages resulting in vehicle unavailability; however, this risk is decreasing with time.

Obsolescence

Obsolescence risk for our rolling stock assets also include digital obsolescence and future safety, accessibility, and network compatibility obsolescence. Many of the EMU systems rely on microprocessor controlled electronic equipment and, over time, this equipment will become obsolete and require replacement and upgrade. In addition to planned maintenance interventions, which include computer chip and memory replacements, the EMU fleet is planned for a mid-life upgrade when they reach the 15-year mark. The scope of this mid-life refurbishment will include required technology upgrades of the computer systems to ensure the design life can be achieved.

Our ongoing ability to meet safety, accessibility, and network compatibility requirements is a risk to assets with a long service life operating in the context of changing legislative and regulatory requirements. KiwiRail will re-signal the Wellington

Metro Network within the EMU's expected lifetime. This will likely require a major retrofit of modern signalling equipment to maintain compatibility with the network. It is also possible that unforeseen changes are required to meet future safety or network standards. Similarly, there could be future accessibility or human factor requirements which our rolling stock cannot meet and will require retrofit or potentially early replacement.

Due to the age of our Wairarapa carriages, obsolescence risk is high. We have no warranties or other contractual safeguards that reduce this risk.

Asset Performance

Our rolling stock assets are generally performing well. Table 14 outlines our rolling stock asset and service performance objectives.

Table 14: Rolling stock asset and service performance objectives

Asset type	Functional quality	Customer Experience	Safety
EMU 2 Car Units	**Reliability)**: Vehicle reliability MDBF > 40,000km **Availability (PI1)**: non – availability shall be equal to or less than 1 vehicle per month during the AM and PM Peaks **MVOS**: On each day the total number of vehicles used in service which exceed the acceptable limits of the Operationally Restricted – Minimum Vehicle Operating Standards requirements shall be less than or equal to 2 **Rail vehicle Utilisation** (PI3): Aim to get even wear and tear across the fleet **Cleanness**: scheduled cleaning shall be processed as per cleaning plan	**MVOS**: Presentation Defects – Minimum Vehicle Operating Standards requirements shall be less than or equal to 2. **Customer Satisfaction Survey**: Comfort of the inside temperature How often the service runs Having enough seats available Service being on time Vehicle being presentable	Maintenance compliance against plan

Asset type	Functional quality	Customer Experience	Safety
EMU simulator	Availability	N/A	N/A
SW carriages **SE carriages** **AG222 Cars**	**Reliability**: Vehicle reliability MDBF > 80,000km **Availability**: non – availability shall be equal to or less than 1 vehicle per month during the AM and PM Peaks **MVOS**: On each day the total number of vehicles used in service which exceed the acceptable limits of the Operationally Restricted – Minimum Vehicle Operating Standards requirements shall be less than or equal to 2 **Rail vehicle Utilisation**: Aim to get even wear and tear across the fleet **Cleanness**: scheduled cleaning shall be processed as per cleaning plan	**MVOS**: Presentation Defects – Minimum Vehicle Operating Standards requirements shall be less than or equal to 2 **Customer Satisfaction Survey**: Comfort of the inside temperature How often the service runs Having enough seats available Service being on time Vehicle being presentable	Maintenance compliance against plan
Zephir 1800E crab	Availability	N/A	Maintenance compliance against plan

EMUs

The average reliability of our EMUs is consistently above our asset performance target of mean distance between service failures (MDBF) of 40,000km. They are meeting design objectives and performing well against similar vehicles internationally. Figure 27 shows the reliability of the EMU Fleet.

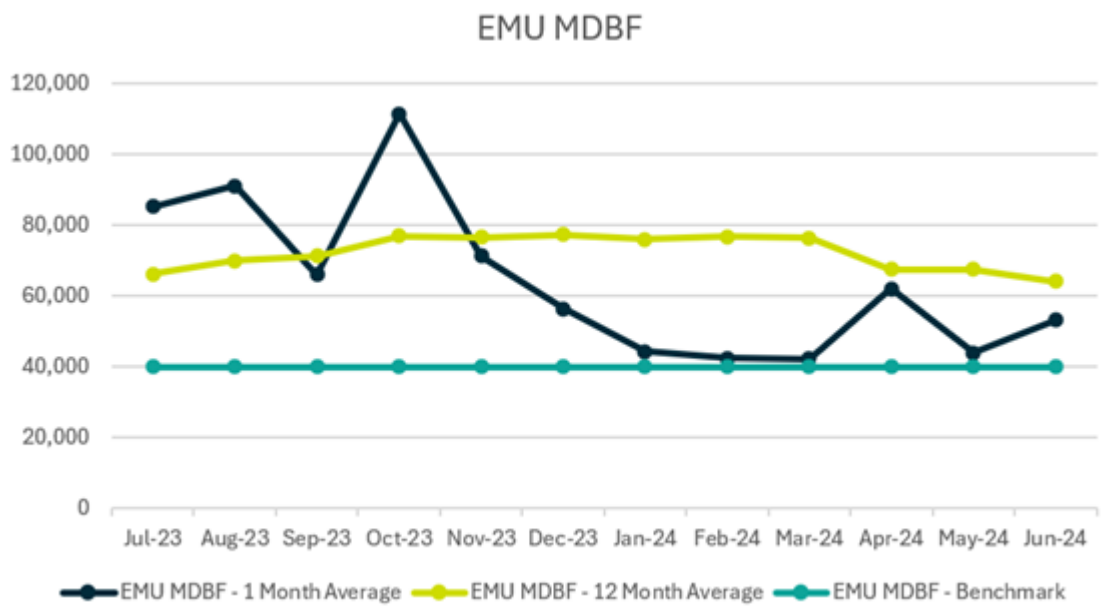


Figure 27: EMU reliability

We use FRACAS to identify defects that affect reliability. We investigate the root causes of these defects and design corrective actions to resolve them. In addition to FRACAS, we have a reliability growth plan in place to target the highest 'reliability affecting' issues and forecast the impact of the corrective actions.

Once implemented, these improvements should see an upward trend in reliability over the next 24 months.

Our EMUs provide a good quality customer experience through:

- sealed windows with air conditioning, for quietness and comfort
- smooth acceleration, deceleration, and ride quality (within the limitations of the track quality prevailing in the Wellington Metro area)
- passenger-operated doors to minimise unnecessary opening/closing cycles and associated drafts and heat loss or gain
- passenger information displays and auto generated announcements
- level boarding (from compliant platforms) and a flat-floor section, particularly convenient for bicycles, wheelchair, mobility scooters, and the mobility-impaired
- open access between the cars of each pair allowing easy movement to reduce local crowding.

Our EMUs meet modern safety standards. They are fitted with the following specific safety features:

- a fire safety design appropriate to vehicles with a significant proportion of tunnel operation
- crashworthiness design including a crumple zone and anti-climb fittings appropriate to a mixed-traffic (freight and passenger) rail-line
- an easily deployed evacuation ramp with handrails at each end door
- CCTV and personal call points, to increase passenger security.

Wairarapa carriages

Reliability of our Wairarapa carriages is measured as a collective rather than at the carriage level. The MDBF target for our Wairarapa carriages is 80,000km. Reliability is consistently above the MDBF target. Our Wairarapa carriages are meeting design objectives and performing well against similar vehicles internationally.

Figure 28 shows our Wairarapa carriage reliability. Due to ongoing network renewal activities the number of service kms accumulated by the fleet has dramatically decreased. As such, failures that affect service have a larger impact on the reliability results.

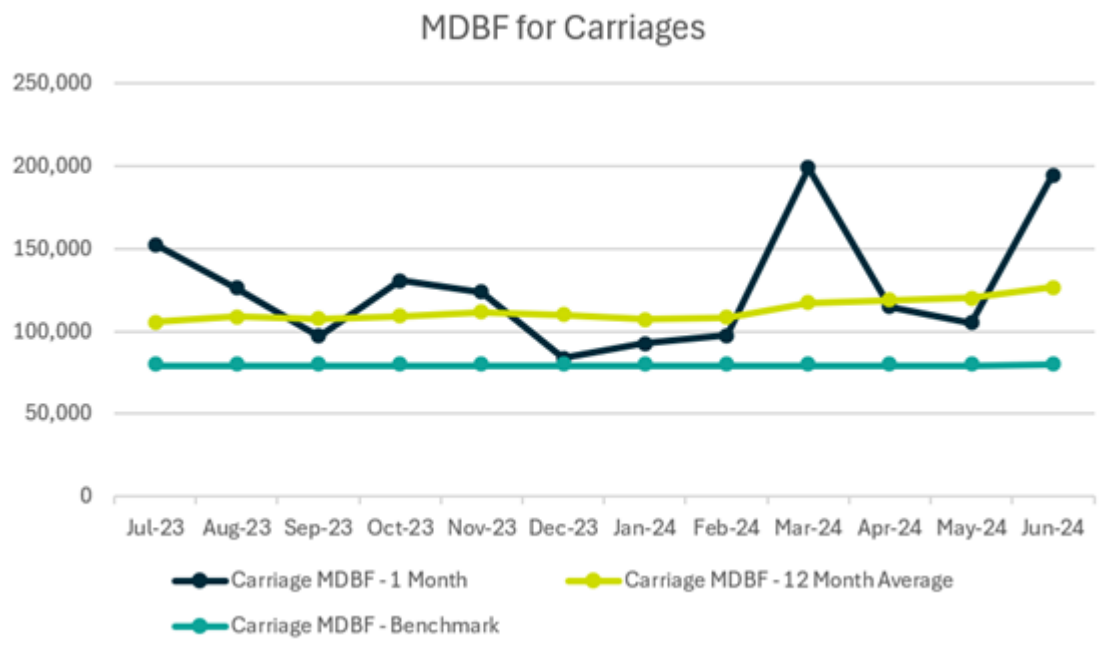


Figure 28: Wairarapa carriage fleet reliability

FRACAS is also used for our Wairarapa carriages in the same way, and for the same purposes, as our EMUs.

Prior to Covid-19, patronage growth was exceeding forecast. Therefore, the ability to provide sufficient capacity during peak times became challenging. The SW and SE carriage quality and functionality largely meet the requirements for our Wairarapa services with modern amenities (air conditioning, passenger information system, etc). The locomotive hauled carriage operating model is dated and, as a result, journey times are sub-optimal.

Passenger accessibility on most of the carriage fleet is poor by today's standards; we have four accessible carriages in our fleet, with three being used every peak. The mobility-impaired access is via hydraulic lifts installed in each SWS/SES carriage, which also has a disabled-access toilet.

The carriage fleet provides a good quality passenger environment, including:

- onboard toilets
- passenger-operated end doors, with automatic extendable steps
- open gangways, to enable passengers to traverse the entire train's length
- low interior noise levels achieved through end vestibules
- automatic internal vestibule doors as per long-distance train practice
- climate control with air conditioning, heating, and ventilation systems
- Passenger Information Displays and automated announcement system
- high-backed long-distance seating including head rest
- tables
- carpet, modern lighting, and interior décor.

The SW fleet provides slightly higher level of passenger amenity with the following additional features:

- seats fitted with drop down tables and power outlets for laptops, and overhead reading lights
- onboard snack vending machines
- onboard potable water coolers
- large full-length windows for improved viewing and curtains.

The ride quality between the SE and SW fleets also varies. Both are acceptable and within the limitations of the track quality prevailing on the Wairarapa line. The SW fleet has slightly lower performance with its coil spring suspension system, while the SE has a modern constant ride height air-spring bogie.

The overall journey time and service frequency of the service is constrained by the type of rolling stock used and the condition of the network. A locomotive-hauled carriage passenger train has much lower acceleration and de-acceleration profiles in comparison to the EMUs. The locomotive also needs to be cut off, turned, and re-coupled to the train after each trip. This incurs high operating costs and slows the equipment cycle time leading to lower utilisation and less platform and service capacity. This ultimately reduces customer experience and satisfaction.

In May 2023, funding was secured for a fleet of new regional trains to replace Wairarapa carriage fleet. The new fleet is expected to start arriving in 2028 and will replace the existing carriage fleet by 2030/31 to improve the safety, customer experience, satisfaction, and reliability.

EMU driving simulator and Zephir shunt crabs

The EMU driver training simulator and the Zephir electric shunt crabs are meeting performance expectations as outlined in Table 5.

Asset information

We have a high level of confidence in our asset data for our rolling stock fleets. We have reliable data about the asset type, condition, construction date, location, quantity, and performance.

All vehicle and vehicle documentation changes since GWRC has obtained ownership have been managed through an Engineering Change process. Part of change implementation includes updating fleet documentation.

For the EMU fleet, the level of knowledge and documentation is extensive, covering the vehicle design and manufacture, as well as the maintenance records. Our primary data sources include design documentation, manufacturing records, Fleet Maintenance Plan, as-built drawings, and FMECA records.

The Wairarapa carriage fleet documentation is not as extensive as the EMU but still provides the level of information needed to maintain and operate the vehicles in line with the design requirements.

For all our vehicle fleet, the vehicle asset data is available through the IBM Maximo Maintenance Management Information System (MMIS) which is managed by vehicle services subcontractor.

Fleet condition assessments are undertaken every two-years to determine asset condition grades and highlight areas of issue or risk. The condition assessments are undertaken internally or externally.

Lifecycle Management and Activities

Our asset management lifecycle approach for our rolling stock is to ensure that the vehicles can meet or exceed our service requirements (performance, reliability, safety, comfort and availability) for the duration of their expected life.

Planning

Prudent management of the rolling stock fleet ensures the necessary capacity, reliability, safety, and customer expectations can be delivered every day into the future.

Due to the long lead times to undertake renewals, upgrades, and replacement activities, forward planning is critical for rolling stock fleet management to ensure that the demanded capacity and frequency can be met and that journeys are on-time to meet customers' expectations.

The components are programmed to be renewed on a time and distance basis – but as the renewals period approaches, assessments are made on life extension options without compromising on safety or reliability. Similarly, the replacement of the trains is based on design life, but condition and performance are assessed as we approach this design life to establish if it is appropriate to extend life.

Capacity management – current and future requirements

Rolling stock is custom built for the Wellington rail environment. Procuring a few additional vehicles to meet demand growth is not cost-effective due to the cost to design and set up production for a small vehicle order. The lead time to procure a new fleet of trains for the Wellington rail environment is typically 5-6 years and forward planning is critical to manage the level of investment and capacity demands.

Capacity planning is undertaken with the objective of procuring sufficiently large quantities to attract international market attention at affordable prices. Ideally, procurement for capacity should be managed at the same time as procurement for renewal. However, where growth is accelerated, additional out of cycle capacity uplifts are likely to be required.

The Wellington Rail Programme Business Case – Wellington Strategic Rail Plan has provided the long-term strategic direction for the Wellington Rail System. The plan recommends the Drive Mode Shift plan, which largely achieves the national and regional mode-shift, decarbonisation and passenger vehicle kilometre deduction targets. To deliver this outcome, additional trains will need to be added to the fleet at the following approximate intervals:

- 18 x 4 car regional trains for the Wairarapa and Manawatu lines, to be delivered in 2028-2029 – this coincides with the need to replace the carriage rolling stock.

- Additional 15 x 4 cars metro multiple units to increase capacity on the Hutt and Kapiti Lines to be delivered in early 2030's
- Additional 16x 2-car (or potentially 8 x 4-car) metro multiple units to increase capacity on the Hutt and Kapiti Lines to be delivered in early 2040's – this will be undertaken in conjunction with the renewal/replacement of the Matangi fleet.

Cost Estimation

Cost estimation for planning purposes is established through knowledge of the market and previous activities of similar nature.

The maintenance and renewal costs are based on fixed price agreements as part of the operator maintenance contract. We have confidence in the costs during the term of the contract (through to July 2031). The refurbishment and renewal activities in the contract are currently priced below market actuals. Therefore, a significant cost uplift is expected at the end of the contract term.

The cost for new rolling stock Is difficult to accurately estimate, as the cost Is Impacted by the order size, specification, and the market. Indicative costings are obtained through enquires with manufacturers.

Table 15: below outlines the risks to our forecasting assumptions. If these risks manifest, investment will be prioritised based on risk and criticality.

Table 15: Risks to significant forecasting assumptions

Risk	Risk Level	Likely Financial Effect	Consequence/Mitigation Strategy
Inflation is lower or higher than anticipated	Med	Med	Changes the level of rates and debts
Interest rates are higher or lower	Med	Med	Changes the level of rates and debts/offset by hedging strategies
Funding from Waka Kotahi NZTA and other funding streams is higher or lower	High	High	Changes the levels of rates and debts. Review level of service and work programmes, adjust as required Strengthen relationships with funding partners

Risk	Risk Level	Likely Financial Effect	Consequence/Mitigation Strategy
Exchange rate is higher or lower affecting the purchase price of passenger rolling stock	Med	Med	Changes levels of rates and debts/hedging of known liabilities and seek more funding from the Crown
Natural disaster/flood event damages GWRC's property, plant, and equipment	Med	Med	Call on insurance and self-insurance funds, adjust operating programmes and change the level of rates and debt if necessary Working with access provider to improve network resilience
Patronage forecast is lower or higher than anticipated	Med	Med	Regular review of long-term strategic plans and growth forecasts, modelling growth scenarios and evaluating interventions on a risk basis at time of investment decision making

Procurement

Procurement is undertaken in accordance with GWRC Procurement Policy, Waka Kotahi's NZTA's Procurement Rules, and Government Procurement Rules. As a result, contracts more than $200,000 are generally undertaken on an open tender basis, with a quality price assessment process to ensure overall value for money.

The procurement of new rolling stock is typically undertaken through an international two stage (EOI and RFT) procurement process. The procurement includes design and build, but there is an opportunity to include maintenance, operation, maintenance facilities, and financing.

Procurement for the maintenance and refurbishment of existing rolling stock was undertaken via a two stage (EOI / RFT) international procurement process and included the operation of the rail service. The current contract is a 9 plus 6-year contract and is 7 years into its term. The 6-year extension has just been automatically awarded based on the achievement of performance requirements.

Contingency planning

The following specific contingency planning is undertaken:

1. We procure sufficient rolling stock to allow for maintenance, renewals, and mid-life activities throughout the lifecycle of the asset, as well as patronage growth.

2. We procure sufficient critical inventory spares during the procurement of new trains to enable renewal activities to occur (i.e., sufficiently large rotable pool). Purchasing insurance spares is also critical for contingency planning. In addition, we procure spare items that are at risk of being damaged or broken during the life of the fleet, and are likely to be difficult to source, expensive, and/or have long lead times.

3. Our contract with our rolling stock maintenance provider allows for a range of contingency options for GWRC to transfer staff and maintenance operation to GWRC or alternative provider if the provider were to withdraw from the contract.

Deliver

Within the Deliver lifecycle stage, we construct and commission the programmes of work that have been identified within the Planning Stage.

When a new rolling stock contract is awarded, we maintain a high level of management oversight throughout the design, manufacture, testing, and commissioning process to ensure that the ideal design, quality, reliability, customer, and safety expectations are achieved.

Operate

Operation and maintenance are contracted through the Partnering Contract. The Partnering contract is a nine plus six-year service contract which commenced in 2016.

The Partnering Contract includes several provisions to ensure the assets are operated in a manner which helps to achieve our desired levels of service; these include:

- a requirement for the fleet to be operated to balance the fleet utilisation within a specific set of MVOS
- a regular exterior cleaning regime
- a regular reporting of asset utilisation, performance, and maintenance activities
- continuous improvement processes such as FRACAS, Warranty Management Configuration and Engineering Change Control Processes
- security management services, and rectification of vandalism.

Maintain

The maintenance contractor conducts the preventive and corrective vehicle maintenance activities and regular exterior & interior cleaning of our rolling stock assets in accordance of vehicle maintenance programme.

Figure 29 shows our EMUs in the maintenance depot.

Figure 29: EMUs in the maintenance depot

The maintenance requirements for our rolling stock assets are outlined below.

EMUs

The maintenance programme for our EMUs is shown in Table 16. The maintenance programme has been developed to meet our expectations of service reliability and quality throughout the life of the fleet.

Table 16: EMU's maintenance schedule

Maintenance Check	Interval	
	Time	Mileage
Planned Maintenance		
'A' Check	30 days	7,500 km
'B' Check	60 days	15,000 km
Annual Electrical Fitness Test	1 year	N/A
Renewals / Heavy Maintenance		
'C1' Check	3 years & 21 Years	270,000 km & 1,890,000km
'C2' Check	6 years & 24 Years	540,000 km & 2,160,000km
'C3' Check	9 years & 27 Years	810,000 km & 2,430,000km
'C4' Check	12 years & 30 Years	1,080,000 km & 2,700,000km
'C5' Check	15 years	1,350,000 km
'C6' Check	18 Years	1,620,000km

Technology on our EMUs, such as the AC traction equipment (VVVF inverters and traction motors), is quite unique to NZ. As a result, experienced overhaulers are only available overseas or alternatively, specialist tooling, processes, and expertise needs to be developed in New Zealand. During the planning of these renewal and overhaul activities, the options, lead times, benefits, risks, and costs are evaluated for each component.

Maintenance is based on component exchange to reduce the down time and to standardise component repair processes. We seek to maintain fleet availability within 90-95% during peak service periods.

Major component renewals, replacements, refurbishment are carried out during C Checks – heavy maintenance, which are budgeted as Renewals or Capex. The life of major components and systems on a train have different periods. Our renewal programme bundles heavy maintenance into a C Check, which is undertaken every three years. Each check focuses on different components and systems based on its life cycle.

As part of the overhaul process, we work with our contractors to seek opportunities to further optimise the renewal programme and extend the overhaul intervals; this reduces the whole of life cost and/or risk profile of the asset. Where possible, savings are shared with the maintenance provider.

All heavy maintenance occurs at the first-line maintenance depot. We have planned a half-life refurbishment (rehabilitation) programme in 2025-28 in conjunction with the C5 check to implement technology upgrades and refit the interior of the trains. We also started to consider increased safety features such as European Train Control System (ETCS) Level 2 at this time subject to a detailed business case and funding support. Figure 10 shows our EMU heavy maintenance expenditure.

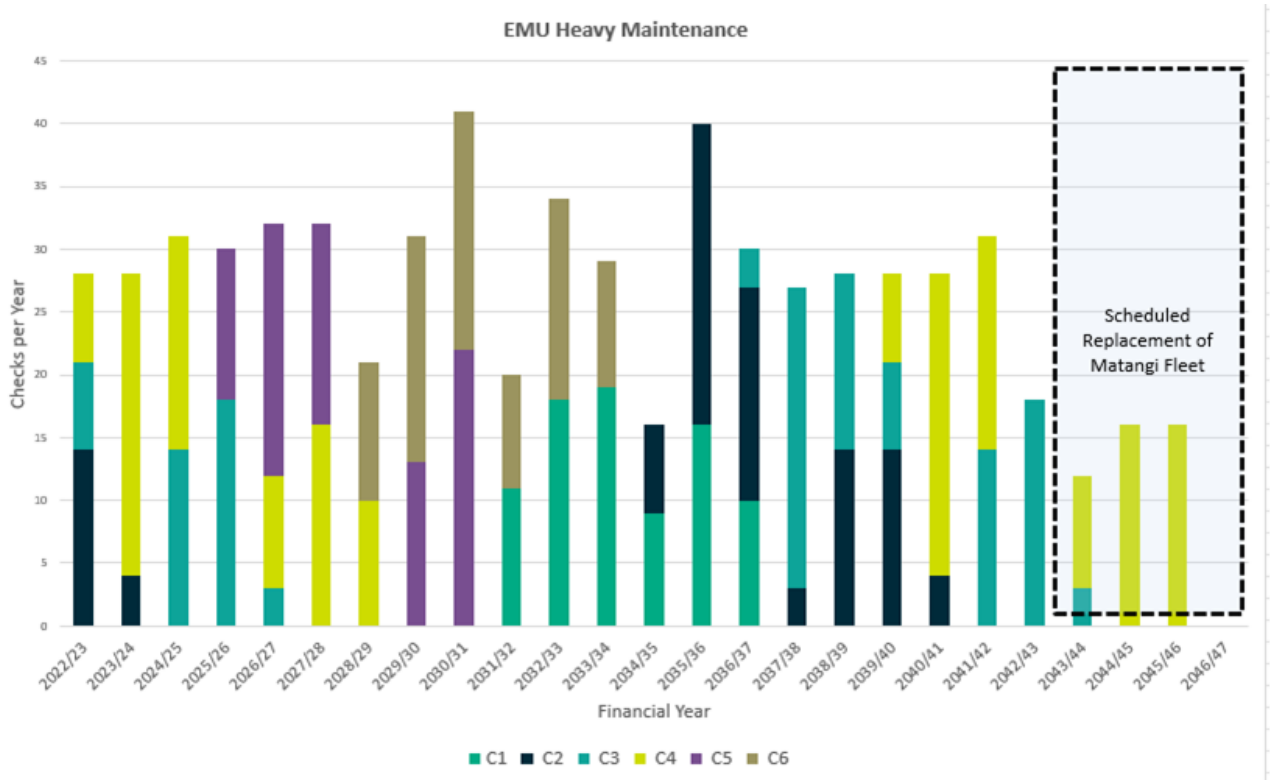


Figure 30: EMU heavy maintenance expenditure

The design life of fleet is 30 years, meaning fleet replacement can be expected to occur around 2040-47, subject to life-extending initiatives.

Figure 31shows our carriage heavy maintenance and refurbishment expenditure.

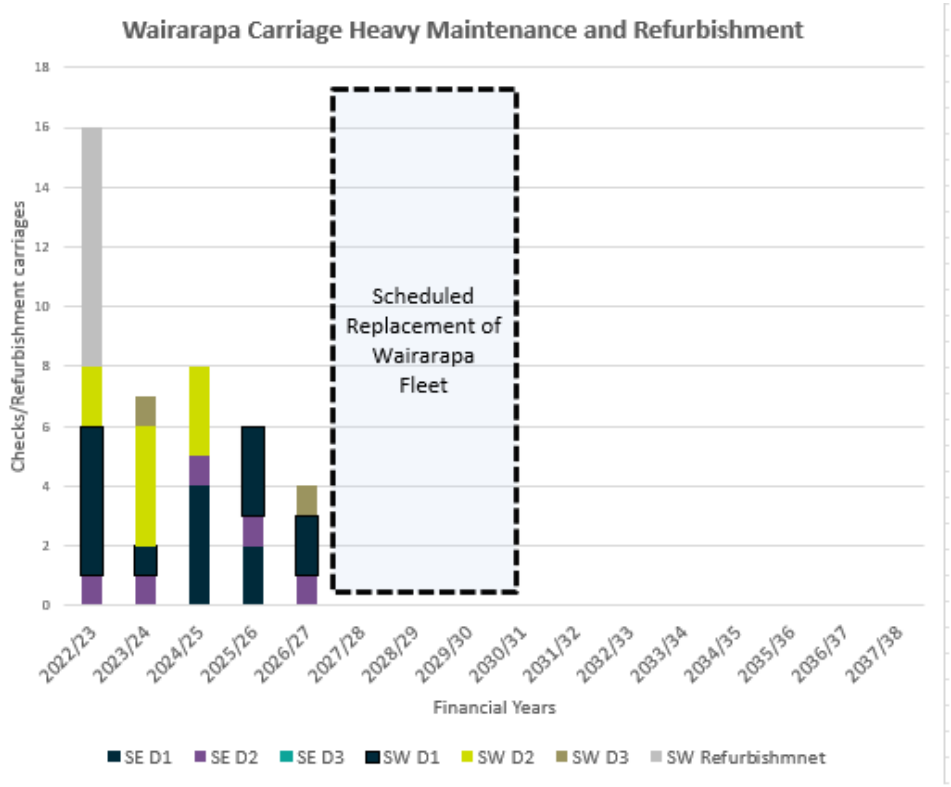


Figure 31: Carriage heavy maintenance and refurbishment

In May 2023, a business case was approved to fund the replacement of the Wairarapa carriage fleet with new fleet by 2030/2031 to replace end of life stock, improve the overall transport corridor resilience and capacity, reduce greenhouse gas emissions, improve public transport attractiveness, improve safety of train operation and support economic growth.

EMU driver training simulator

The EMU driver training simulator has the following preventative maintenance requirements:

1 month:	Cleaning
6 months:	Calibration and database checks
12 months:	Deep cleaning and data archiving
4 years:	UPS battery replacement

SW class, SE class and AG222 carriages

SW, SE, and AG carriages are maintained by our maintenance contractor in the KiwiRail owned Carriage Depot, which also supports KiwiRail's other passenger carriage services. It includes an automated exterior wash plant and a stabling and marshalling yard. Cleaning is the same as for the EMUs.

The maintenance programme for the carriages has been developed to meet our expectations of service reliability, availability, quality, and safety throughout the life of the assets. Table 17 shows the carriage maintenance schedule.

Table 17: Carriage maintenance schedule

Maintenance Check	Interval	
	Time	Mileage
Planned Maintenance		
Servicing	As required	
Daily	When carriage is in the Wellington carriage depot	Max 1500km
'A' Check		12,000km
'B' Check		24,000km
'C' Check (including electrical warrant of fitness)	12 months	
Generator Servicing	450 & 1800 hours	
Renewals / Heavy Maintenance		
'D1' Check	Half wheel life	Approximately 300,000 - 400,000km
'D2' Check – Bogie Overhaul	Full wheel life	Approximately 600,000km – 800,000km
'D3' Check – Generator Replacement	25,000 hours	

Maintenance practices and cost sharing arrangements are the same as for the EMUs.

The components and systems on a carriage are far less extensive than on the EMUs. Renewal programmes are bundled into three different renewal programmes called D Checks; these checks are undertaken at half wheel life and full wheel life (due to the wheel replacement being the most significant component on a carriage), and 25,000 hrs of generator operation. All renewal activities are planned to occur at the first-line maintenance depot.

Major component renewals and replacements are carried out during the D Checks, which are budgeted as Renewals.

Zephir 1800E crab

Table 18 shows the Zephir 1800E crab preventative maintenance plan which is built around hours of operation.

Table 18: Zephir 1800E crab preventative maintenance requirements

Hours of operation	Overview of requirements
Every 500	General inspection of components, insulation checks, battery checks, lubrication levels, and Functional tests
Every 1000	Lubrication, oil and filter replacement, security of fasteners
Every 3000	Replace hydraulic oil
~6000	Rubber rail wheels
~12000	Battery pack replacement

The preventative maintenance programme is included within the vehicle services contract.

Divest or Dispose

There are currently no plans to divest or dispose of rolling stock other than when it is at end of life and has been replaced with a new fleet.

The market for resale of New Zealand end of life passenger rolling stock is limited as there are limited third world countries or developing nations which have a narrow-gauge railway. While there is potentially some resale for the Wairarapa carriage fleet (locomotive hauled) for heritage operators or similar within New Zealand, it is unlikely

there is a need for the entire fleet. There are no practical resale opportunities for the EMUs due to Wellington's unique narrow gauge and 1,500Vdc railway network.

While resale opportunities will be explored, the most practical option for disposal is likely to be scrapping.

Forecast expenditure

The work programme and corresponding expenditure in this ACP is based on identified needs and is derived from the expenditure in GWRC's 20234-2054 Long Term Plan (LTP) and Regional Public Transport Plan (RPTP). At the time of writing, we have not received clarity on funding from the National Land Transport Fund (NLTF). If the funding from the NLTF changes from that allowed for in the LTP, the investment plan presented within this ACP will be reviewed and re-prioritised.

The key investment drivers for our rail rolling stock aim to ensure:

- we have sufficient rolling stock capacity to meet forecast peak customer demand.
- our rolling stock is safe, comfortable, available, and reliable for our customers to use.
- our rolling stock is kept clean and that sub-components are in a workable and good condition.

Opex

The maintenance opex is forecast to grow from approximately $25m per year to $31m per year over the next 10 years as the fleet size significantly increases. The maintenance cost is then forecast to gradually increase over the next 20 years to $41.6m per year as the fleet grows in response to predicted demand.

The operational maintenance costs for the rolling stock assets are within a fixed price contract with our contracted operator and maintainer Transdev / Hyundai-Rotem; these costs are reflected in our 30-year asset investment plan. These operational costs include cleaning, planned maintenance and corrective maintenance, depot plant and equipment maintenance, inventory management, warehouse facility and inventory financing, software Escrow, and insurance.

Capex

As shown in Figure 32, $757m of renewal capital expenditure across the 30 years for the rolling stock fleet. The forecast fluctuates over time due to the various life cycles of rolling stock major components and systems, and replacement of the EMUs between 2040 and 2045. Over the next 10 years, the average renewal capital investment is expected to be approximately $11.6m per year.

In addition, $739m of improvements are forecast across the next 30 years, with $380m of this expected to be externally funded. This improvement capex is required:

- providing provide a low/zero emission fleet for replacement rolling stock and provide additional capacity and service frequency on both the longer distance Wairarapa and Kapiti Lines.
- boosting the capacity and service frequency of the suburban services operating on the current electrified network; in particular, on the Hutt and Kapiti Lines.

Figure 32 shows our rolling stock opex and capex forecast.

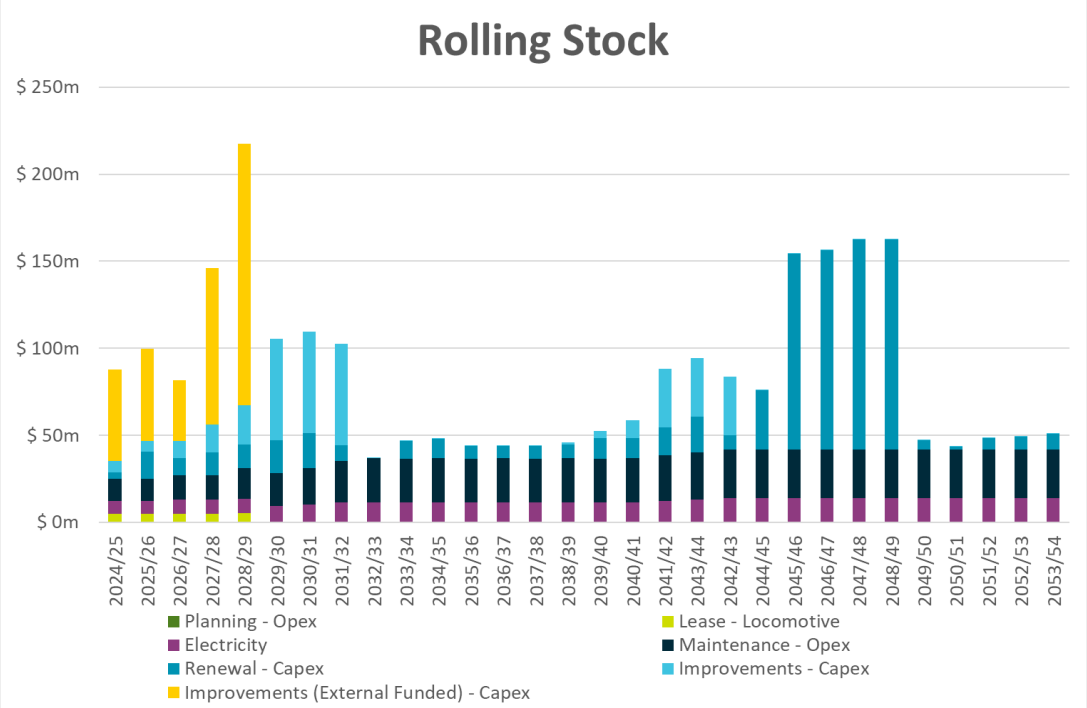


Figure 32: Rolling stock opex and capex

Rail Station Infrastructure Asset Class Plan

This asset class plan describes our asset lifecycle management of our station infrastructure assets. Our station infrastructure assets are located on rail platforms which are owned and operated by KiwiRail.

Our station infrastructure assets consist of:

On-station assets:

- buildings
- shelters
- platform furniture
- customer information signage

Station Access assets:

- pedestrian overbridges
- pedestrian subways
- Park and Ride facilities
- Bike and Ride assets
- access pathway assets

Station Auxiliary assets:

- security assets
- lighting
- signage

Strategic objectives

Metlink's strategic focus areas directly determine how we plan, develop, maintain, and operate our station infrastructure assets. Our station infrastructure assets:

- determine the environment our customers experience while waiting to board our rail services.
- provide information to our customers on the services and surrounding communities.
- determine the ease by which our customers reach the station platform to access our public transport services.

Therefore, our rail station infrastructure assets:

Support patronage growth by providing an environment that is pleasant, comfortable, safe, has the facilities sought by our customers, and provides access to information about services, the station, and surrounding communities.

Support **Access and Accessibility** by ensuring facilities and information are accessible by all.

Support **Decarbonisation** by supporting the move from private vehicle to public transport and encouraging customers to use public transport over private vehicles.

To achieve these outcomes, we have established the following asset strategies that guide our planning for rail infrastructure assets. We aim to ensure:

1. Shelter is sufficient to protect the projected number of customers from the weather.
2. Stations have sufficient seating capacity for the projected number of customers.
3. Stations are clean, and assets are in good functioning condition.
4. Information provided is sufficient, timely, and relevant.
5. Stations provide a safe environment with uniform lighting, and good CCTV coverage.
6. Bike parking facilities are adequate to meet demand and available at all stations.
7. Stations with Park and Ride are managed to balance supply and demand so that capacity is at 85% peak occupancy by 9am on a typical business day.
8. All structures meet 67% of the New Building Standard (NBS).

The investments outlined in this AMP are focussed on meeting these objectives.

Asset characteristics - current state

Our station infrastructure assets are located on rail platforms which are owned and operated by KiwiRail. There are 48 stations across our rail network. Except for Wellington Station, which is owned by KiwiRail. GWRL, a wholly owned subsidiary of GWRC, owns and manages the customer facing facilities at all these stations.

Station infrastructure covers several asset categories with a wide range of customer utilisation, life expectancies, and intervention points. A significant proportion of our station infrastructure buildings, shelters, overbridges, and subways are very old. The following assets are heritage protected which results in higher upgrade costs and longer planning and design phases:

1. Paekakariki building: Heritage NZ Historic Place Category 2
2. Carterton building: Rail Heritage Trust Category B
3. Solway shelter: Rail Heritage Trust Category A
4. Plimmerton building: Rail Heritage Trust Category B

When ownership of the station infrastructure assets was transferred to us in 2011, they were in poor condition. Since then, significant investment has been required to maintain, renew, and replace the infrastructure to bring these assets up to the requisite levels of service.

We categorise our stations based on use as shown in Table 19.

Table 19: Station categorisation based on use

Extremely High Use (>15000 passengers/week)	Very High Use (>10,000 and <15000 passengers/week)	High Use (>5500 and <10000 passengers/week)	Medium Use (>3500 and <5500 passengers/week)	Low Use (<3500 passengers/week)
Wellington	Paraparaumu	Paremata	Naenae	Western Hutt
Porirua	Waikanae	Linden	Pukerua Bay	Maymorn
Waterloo	Petone	Johnsonville	Simla Crescent	Woodside
	Upper Hutt	Woburn	Wallaceville	Matarawa
		Raroa	Khandallah	Solway
		Taita	Featherston	Renall Street
		Trentham	Masterton	Awarua Street
		Tawa	Carterton	Mana
		Silverstream	Paekakariki	Epuni
		Plimmerton	Redwood	Pomare
			Ava	Ngauranga
			Ngaio	Heretaunga
			Crofton Downs	Kenepuru
			Takapu Road	Melling
				Box Hill
				Wingate
				Manor Park

The following is an overview of our station infrastructure assets.

Station buildings

We own 23 station buildings along our rail network. The Wellington Station building is owned by KiwiRail with key public and operational areas leased to us.

Our station buildings vary significantly in size and functionality, ranging from large station buildings with toilets and waiting rooms at higher use stations to small station buildings at low use stations.

Figure 33 is an example of a very high use station.

Figure 33: Upper Hutt Station Building – rebuilt in 2015.

Historically, most station buildings were staffed and provided a range of customer amenities, including ticket offices. With the introduction of 'Snapper on Rail', all outer station ticket offices were closed. Wellington Station is now the only staffed station on the network.

Several stations still provide toilets and inside waiting areas. These are Wellington, Petone, Waterloo, Upper Hutt, Porirua, Paraparaumu, Waikanae, Featherston, and Masterton.

The removal of staff from stations previously resulted in some buildings being closed to the public. However, several station buildings have been renovated to provide areas for local community or commercial activities. For example, Paekakariki and Carterton Stations have a museum; Plimmerton Station has a model railway store; and Paraparaumu has a small coffee shop. In the future, more station buildings will be renovated to provide additional community or commercial activity areas.

The heritage protected station buildings incur higher upgrade costs and have longer planning and design phases.

Figure 34 shows the medium use heritage protected Carterton station building.

Figure 34: Carterton Station building

Station shelters

We provide station shelters on all rail platforms. These range from extensive shelters, such as Paraparaumu Station which run most of the platform length, to smaller aluminium or timber shelters such as Matarawa Station.

Previously, several of our station shelters were old and in poor condition. Our shelter renewal and upgrade programme has improved the condition with many new shelters built throughout the network to provide a comfortable waiting area for customers. High use stations typically have larger or multiple shelters while low use stations have smaller single shelters.

Our station shelter improvement programme continues to upgrade stations to ensure sufficient shelter is available for the demand at a station, as well as upgrading shelters that do not provide adequate protection from the weather. Recent upgrades include Wingate and Pomare stations.

Figure 35 shows the previous Wingate shelter.

Figure 35: Previous Wingate shelter

Figure 36 shows the upgraded Wingate shelter.

Figure 36: New Wingate shelter

Station platform furniture

Our platform furniture assets consist of seats and litter bins. Seats are provided for customer comfort at all our stations, and litter bins assist in keeping our stations tidy.

Our seats typically consist of bench style seats made of either timber or galvanised steel to provide a comfortable place for customers to wait for their rail service. In the past, these seats have been constructed in various colours and materials, but our approach is now to standardise seating across stations to ensure cost efficiency and a consistent feel across our network.

Figure 37 shows our timber bench style seats which are installed in covered locations.

Figure 37: Timber seats at Redwood Station

Figure 38 shows our galvanised steel bench style seats which are installed in uncovered locations.

Figure 38: Galvanised seats at Trentham Station

Previously, litter bins were only installed at staffed stations but since 2016, litter bins have been installed at all stations across our network. An example of such a litter bin is shown in Figure 39.

Figure 39: Litter bin with signage wrap

Station Customer information and signage assets

Our customer information and signage assets provide customers with the necessary information for their journeys.

These assets include the Wellington Station customer information system, buses replacing trains (BRT) LED signage, totems and flat panel signage, directional and timetable signage, and the outer station PA system.

The Wellington Station customer information system ensures customers are informed of platform departures as well as any disruptions. The system includes a large Jumbotron display, platform departure displays, and audio equipment, all combined with software that allows automated departure announcements and dynamic changes.

The BRT LED signage can display coloured text indicating when trains are replaced by buses, or other service information, to alert customers about journey changes before they reach the platforms.

Outer station remote PA announcements can be made as necessary. Multicasting, which will allow for the same PA announcement to be broadcast to many stations at once, is being rolled out along the network to increase the methods we have available to provide customers with up-to-date information.

Totem and flat panel signage provide a consistent level of directional and timetable information, along with maps of the local area relative to each station, across all our stations to ensure customers know where to look for information no matter which station they're using.

We have rolled out standardised Metlink signs across the network. We are currently rolling out refreshed directional wayfinding signage which use icons to provide improved information accessibility.

We are replacing the legacy RTI system throughout 2024 and 2025. This will include new signage assets.

Station pedestrian overbridges

We have 11 pedestrian overbridges across nine stations. These provide passengers access to platforms and were in very poor condition when ownership was transferred. All bridges have now been upgraded through a rolling programme of seismic and cosmetic improvements and are in good condition.

Station pedestrian subways

We have 13[8] pedestrian subways across the network to enable passengers to access platforms. The subways at Petone, Taita and Waterloo are under construction and due to be completed in FY24/25. The remaining 2 Subways were in poor condition in Porirua. A rolling programme of seismic and cosmetic improvements has been taking place which will see all subways across the network strengthened to at least 67% New Building Standard (NBS) along with lighting, CCTV, painting, flooring, and handrail upgrades if applicable.

Figure 40 shows the recently upgraded Pomare Station subway.

Figure 40: Upgraded Pomare Station subway

[8] Previously Upper Hutt subway was included in this number, but this subway is not owned by Metlink.

Station Park and Ride

Park and Ride facilities are a vital part of our integrated public transport network. They provide carparks at, or near, our railways stations where customers can park their vehicle for free and continue their journey on our public transport network. This results in less road congestion, reduced emissions, and enhances travel choice and accessibility to our public transport network. Our Park and Ride facilities are mostly off-street facilities; however, we also work with local TAs to provide on street parking in the vicinity of some stations such as Taita, Naenae, Tawa and Silverstream.

We provide Park and Ride facilities at 33 stations across our network. They range from small carparks with fewer than 50 spaces, to large carparks with more than 400 spaces. At some stations, like Upper Hutt and Petone, numerous car parking areas are provided, while at other stations, like Khandallah and Raroa, a single car parking area is provided. At key stations where Park and Ride is in high demand, we provide carpool parking spaces in preferred parking areas reserved for anyone with two or more people arriving in a single vehicle.

The demand for Park and Ride capacity is increasing and to date, increasing Park and Ride facilities has been a key factor in growing rail patronage as it provides easy first and last mile connections for our customers. Generally, the new facilities have filled up as quickly as they are built and opportunities to expand Park and Ride are virtually non-existent. Therefore, in most cases, we aim to ensure that existing Park and Ride facilities have adequate demand management rather than increasing supply. This is in line with the Smarter Connection strategy and hierarchy in which higher priority is assigned to access for pedestrians, active modes, feeder bus services, and drop offs before private vehicles ensuring that Park and Ride is prioritised for people with a genuine need to drive to core public transport.

Figure 41 below show the station access hierarchy.

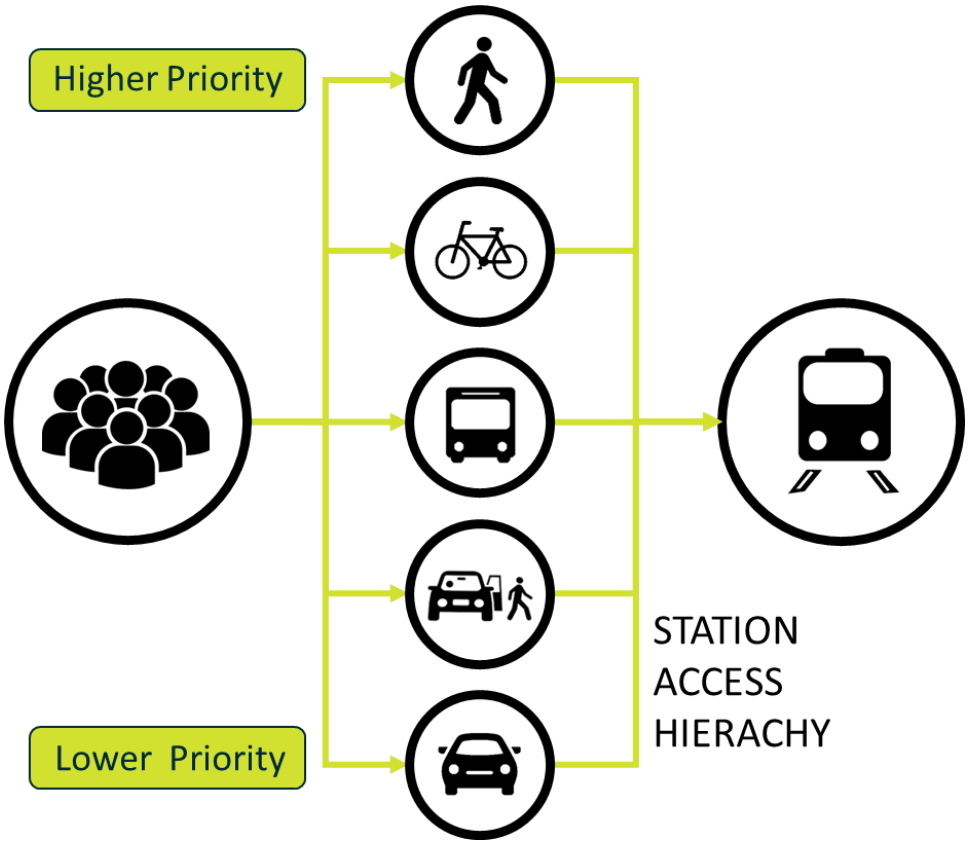


Figure 41: Station access hierarchy

In most instances, our Park and Ride assets consist of the pavement structures and kerbing with land provided through a mixture of ownership and lease arrangements. Predominantly we lease the Park and Ride land, however we do own some of the land at Tawa, Heretaunga, Paraparaumu, Petone, Porirua, and Waikanae stations.

Recent Park and Ride facilities constructed at Porirua, Paremata, and Waterloo stations have also included stormwater treatment devices in their design in the form of rain gardens for the carpark run off; this contributes to better environmental outcomes for these Park and Ride facilities. We have committed to ensuring all modifications and upgrades to Park and Ride will ensure no discharge of untreated storm water from site.

Figure 42 shows our Porirua Station Park and Ride northern rain garden.

Figure 42: Porirua Station Park and Ride northern rain garden

Station Bike and Ride assets

Our Bike and Ride assets comprise of cycle cones, bike racks, cycle lockers, double tiered cycle shelters, and a small number of cycle storage sheds. We provide these assets for the safe, secure storage of bicycles at our stations to increase first and last mile travel options for our rail customers. Due to increased demand, carrying bicycles within the saloon area of trains during peak time is no longer suitable. As a result, we are improving and increasing the provision of cycle storage facilities to enable passengers to leave their bicycles safely and securely at the outer stations.

At several key stations there are cycle locker units for the storage of bicycles. These are either a single unit, which can store one bike, or double units with separate lockers at each end separated by a diagonal divider which can store two bikes. Cycle lockers are no longer being added to our stations due to the costs involved in maintaining and operating these assets. Instead, we are rolling out a series of double tiered cycle shelters at key stations. We have invested in additional security enhancements like improved lighting, CCTV, and locating Bike and Rides in places with passive surveillance to improve customers' ability to cycle to stations and safely store their bikes. To date, these double tiered cycle shelters have been installed at 10 stations, with a further four bike shelters planned for Solway, Masterton, Taita and Waikanae.

Figure 43 shows the double tiered cycle shelter at Paraparaumu Station.

Figure 43: Paraparaumu Bike and Ride

Station access pathway assets

Our access pathway assets consist of access paths and fences. Our access paths provide the link to and from our rail platforms. They enable easy, identifiable routes for our customers to move safely and efficiently to and from our platforms.

Many of our access paths are sealed with asphalt and have a barrier or fence running alongside them for safety. We are also installing chicanes to discourage use of the access paths by motorcycles, etc, but still maintain full access for those with mobility impairments.

Station security assets

National research identifies that personal security concerns become common barriers to the use of public transport. Personal safety is highly correlated with customer satisfaction.

Our security assets consist of closed-circuit television (CCTV), associated network and recording equipment, and emergency call points. These assets assist in crime prevention and anti-social behaviour at our stations and shelters. We use them for both the security of our assets and the safety of our customers. This equipment is installed at all stations (except Matarawa and Western Hutt), all rolling stock stabling yards, and 87% of Park and Rides.

We have more than 985 cameras which are monitored 24/7. The emergency call points are also monitored.

We undertake rolling CCTV renewals and network expansion is planned for the remaining Park and Ride sites and station underpasses.

Figure 44 shows an example of our station CCTV cameras.

Figure 44: Station CCTV cameras

Station Lighting

A high standard of lighting is essential to enable customers to safely access our network at night. We have a minimum level of service of 50 lux (average) across all station platforms.

The lighting across our network is installed to deliver a specific function, which is either flood lighting, such as most of the pole top lights on platforms or Park and Ride facilities, or localised lighting within shelters and subways. In addition, emergency lighting is also provided in some locations. A range of lighting types have been deployed across the network.

Virtually all our lighting is LED following a 2-year upgrade programme. These have a lower energy consumption, longer asset life, and lower whole of life cost.

Figure 45 provides an example our platform lights.

Figure 45: Platform lights at Carterton and Paraparaumu stations

Population, life expectancy and current remaining useful life

Our station infrastructure assets cover a large range of assets and customer utilisation, life expectancies, and intervention points.

Table 20 shows the asset population by type, along with their expected life and current average remaining useful life of our station infrastructure assets.

Table 20: Rail station infrastructure population, life expectancy, and current remaining life

Asset type	Population	Standard Base Life (years)	Current Remaining Useful Life (years)
Station buildings	23	30-150 (Average 87 years)	3-138 (Average 15 years)
Station shelters	88	30 – 150 (Average 44 years)	11-126 (Average 25 years)
Station platform furniture	318 seats 92 litter bins	15 – seats 25 – litter bins	3-15 (Average 7 years) - seats 3-24 (Average 18 years) – litter bins
Station Customer Information	79 totems and flat panels 99 BRT LED signs 248 PA speakers	15 – totems and flat panels 15 – BRT LED Signs 7 – PA Speakers 15 – digital displays	11-15 (average 12 years) – totems and flat panels 12 – BRT LED signs 1-7 (Average 4 years) – PA Speakers 12 – digital displays
Station overbridges	11	50-100	7-58 (Average 18 years)
Station subways	13	50-100	16-50 (Average 19 years)
Station Park and Ride	72 separate Park and Ride areas across 33 stations	25 for asphalt surfacing 14 for chipseal surfacing	1-23 (Average 9 years)

Asset type	Population	Standard Base Life (years)	Current Remaining Useful Life (years)
Station Bike and Ride – Cycle Shelter	13	25	22-25 years
Station Bike and Ride - cycle facilities (cone, rack and box)	9 cycle cones 38 cycle racks 75 cycle lockers	15-25 (Average 19 years)	3-13 (Average 7 years)
Station access pathways	6780 Fences (metres) 3670 Walkways (metres)	20-30	3-20 (Average 15 years)
Station CCTV	955 cameras 72 duress points 7 information/duress points	7 - cameras 15 – duress points 15 – information/duress points	1-7 (Average 4 years) - cameras 5-13 years (average 9 years) – duress points 15 years – information/duress points
Station lighting	1302 light fittings 897 light poles	10 – light fittings 25 – light poles	3-8 (average 7 years) – light fittings 1-20 (average 15 years) – light poles
Station signage	2432 signs	7	1-7 (Average 4 years)

The ages of our station buildings vary significantly from historic buildings (built pre-1900s) through to recently renewed buildings. Our historic station buildings, such as Paekakariki (built in 1910) and Carterton (built in 1879), have heritage protection. Figure 46 shows the era our station buildings were built.

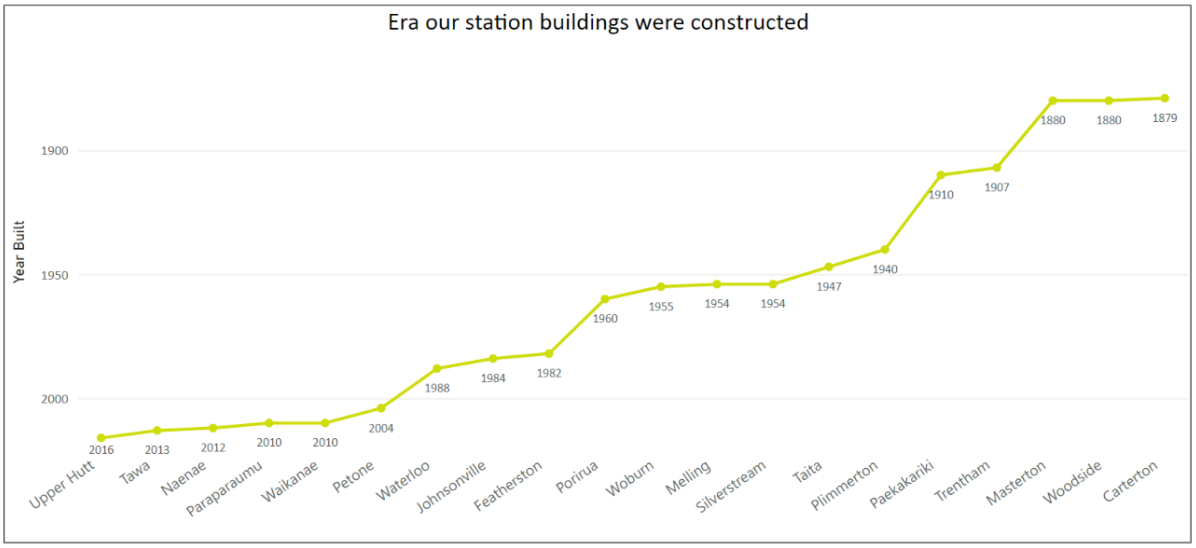


Figure 46: Era our station buildings were built

Asset importance

Understanding asset importance is essential for effective asset management. The importance (criticality) of an asset is used to prioritise and optimise expenditure in an environment where funding is constrained.

We determine the importance of our station infrastructure assets by the average number of people that pass through each location each week, referenced as typical weekday boardings. Assets at a busy station will have a higher average importance than assets at a small station.

We recognise that our very high use stations (as categorised in Table 19) Petone, Waterloo, Taita, Upper Hutt, Porirua, Paraparaumu, and Waikanae are stations of particular importance due to the number of people that use these locations daily. While closure of these stations is unlikely to result in a complete loss of the entire rail service, we recognise that closure of these stations would result in major disruption to the local area and the significant number of our customers who use these stations.

In addition to station or site-based importance, there are some assets that have a particular impact on public safety and therefore are always considered important assets irrespective of where they are located. For example, we have 10 stations where the station platform is located between the rail tracks. This means that if either the pedestrian overbridge or subway which provides access to the station platform is closed, there is no other way for our customers to access the station. This would result in having to close the station. While this would not prevent the rail service from running, it would cause significant disruption for customers who use that station.

Figure 47 shows the distribution of asset criticality by asset type across our stations, with 5 being the highest criticality and 1 with the lowest criticality. For the most part our Bridges, Subways and Buildings are our most critical asset types, with signage and furniture considered least critical.

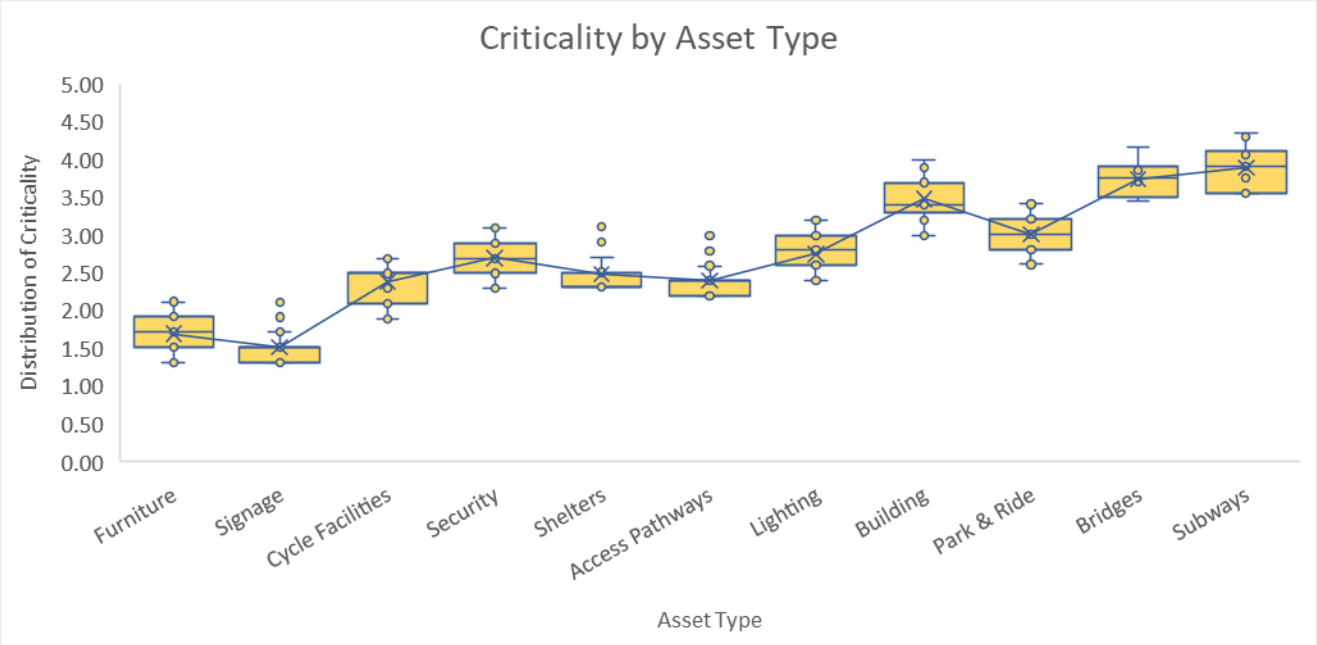


Figure 47: Distribution of asset criticality by asset type across our stations

Figure 48 shows our Porirua station, which we recognise as a very high use station on our network.

Figure 48: Porirua Station

Asset condition

We determine the condition of our station infrastructure by using the condition grade rating system within the International Infrastructure Management Manual (IIMM).

Table 21 describes the condition rating system.

Table 21: Description of condition rating system

Condition Rating	
Rating	**Description of Condition**
1	Very good condition only preventative maintenance required
2	Good condition: Minor maintenance required plus Preventative maintenance
3	Moderate condition: Significant maintenance required
4	Poor condition: Significant maintenance required
5	Poor condition: Unserviceable

Assets are typically replaced where asset condition is forecast to be at condition 5 or where the forecast cost of maintaining an asset (condition 3 and 4) is greater than the replacement cost. Table 22 shows the average condition rating and the percentage of each asset type with a condition grade greater than four across our station assets based on a desktop assessment of the assets.

Table 22: Station infrastructure asset condition

Assets	Average Condition Rating	% of Assets with Condition Grade >4
Station Buildings	2.31	0%
Station Shelters	1.66	0%
Overbridges	2	0%
Park and Ride	1.84	3.23%
CCTV	2.25	0%
Lighting	1.81	0%
Signage	2.21	0%
Station seats and litter bins	1.74	0%
Bike and Ride	1.94	17%
Station Access	1.95	0%
Subways	1.54	0%

Station buildings

A detailed condition assessment is undertaken on our station buildings every three years. In the intervening years, the estimated condition rating is determined through desktop modelling. The condition rating of the buildings is an averaged score of its component parts. The results from the condition assessments are a key input into our forward maintenance planning which informs our expenditure forecast.

The condition of our station buildings varies from poor condition to recently being upgraded or renewed assets such as Paraparaumu northbound building. Most of our station buildings are in good condition with significant maintenance work undertaken since we took over ownership of these assets.

The roof canopy at Waterloo Station is in very poor condition. The canopy's outer skin is corroded, and its design is known to create a wind tunnel effect, particularly in southerly winds, which significantly impacts customer experience. The Waterloo

Station building is expensive to maintain due to the confined working space at height. An investigation is currently in progress to determine the best long-term solution for the building, with a concept study for a transit orientated design facility underway. Complete replacement of the Waterloo canopy is desired due to its poor condition, high ongoing maintenance costs, and performance issues. We are taking a long-term view of options for this facility to ensure the right solution is found prior to upcoming planned maintenance work on the spaceframe structure.

The refurbishment trigger for station buildings is condition 3.5. We have a programme of work scheduled to improve the condition of Woburn Station. This is subject to funding from the NLTF.

The condition profile of our station buildings is shown in Figure 49.

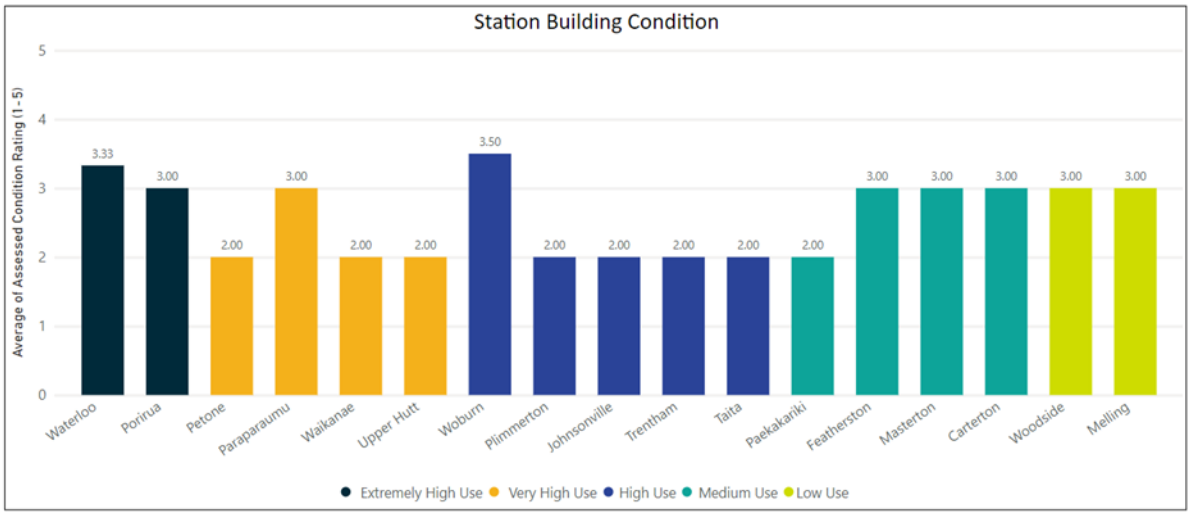


Figure 49: Station building condition at mid-2024

Station shelters

Below is an overview of the recent work that we have completed to improve the overall condition of our station shelters:

- Petone and Awarua Street station shelters have recently been refurbished as part of our ongoing shelter programme. Previously, these shelters had the worst overall condition.
- two shelters have been installed at Plimmerton Station to accommodate demand growth
- a shelter upgrade including the installation of a wind screen, and new seats has been completed at Paremata Station. This also involved the demolition of the southern building.
- a shelter upgrade, including the installation of a wind screen and new seats, and the demolition of concrete walls has been completed at Linden Station.

- a seismic and cosmetic upgrade including the installation of wind screens and new seats has been undertaken at Petone Station northbound.
- seismic and cosmetic upgrades along with wind screens and new seating has been undertaken at Awarua Street Station.
- the demolition of the existing building and a new large shelter has been installed at Pomare Station.
- two new shelters including seating has been installed at Plimmerton Station as part of KiwiRail's Porirua Area Capacity Enhancements project.

The refurbishment trigger for station shelters is condition 3 except for aluminium shelters which is condition 4, as these are replaced and not refurbished. We have in place a programme of work for the shelter at Ngauranga Station to improve its condition. As mentioned before, we are taking a long-term view of options for Waterloo Station to ensure the right solution is found prior to upcoming planned maintenance work on the spaceframe structure.

Over the last two years, new aluminium shelters have been installed at Porirua, Kenepuru, Paremata, Wingate, and Waterloo Stations -

Figure 50 shows the condition profile of our station shelters. For the most part our shelters are now in a good condition with future shelter renewals aimed at addressing inadequacies in shelter capacity to meet demand or weather protection.

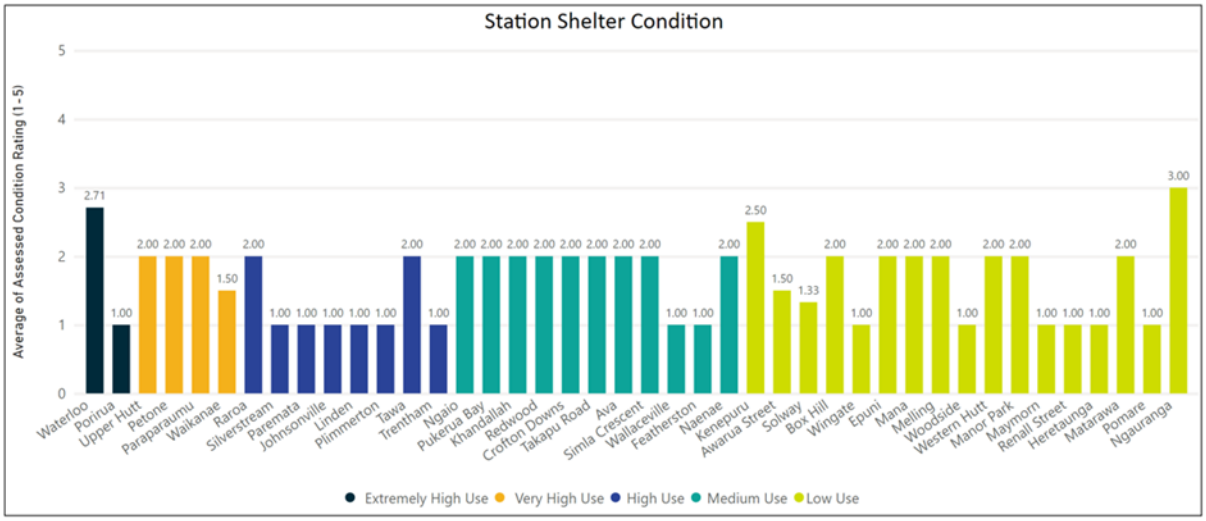


Figure 50: Shelter condition at mid-2024

Station pedestrian overbridges

The overbridges are old, long-life assets, which have had minimal to no preventative maintenance through much of their life. However, since we have taken ownership of these assets, we have been investing in progressively improving the condition of the overbridges.

Figure 51 shows the overall condition profile of the station overbridges from desktop assessment in mid-2024. Since the condition assessments, Woburn, Tawa, Raroa, and Heretaunga overbridges have been maintained to improve their overall appearance and functionality. These conditions have been adjusted through a desktop assessment.

The refurbishment trigger for station pedestrian bridges is condition 3.

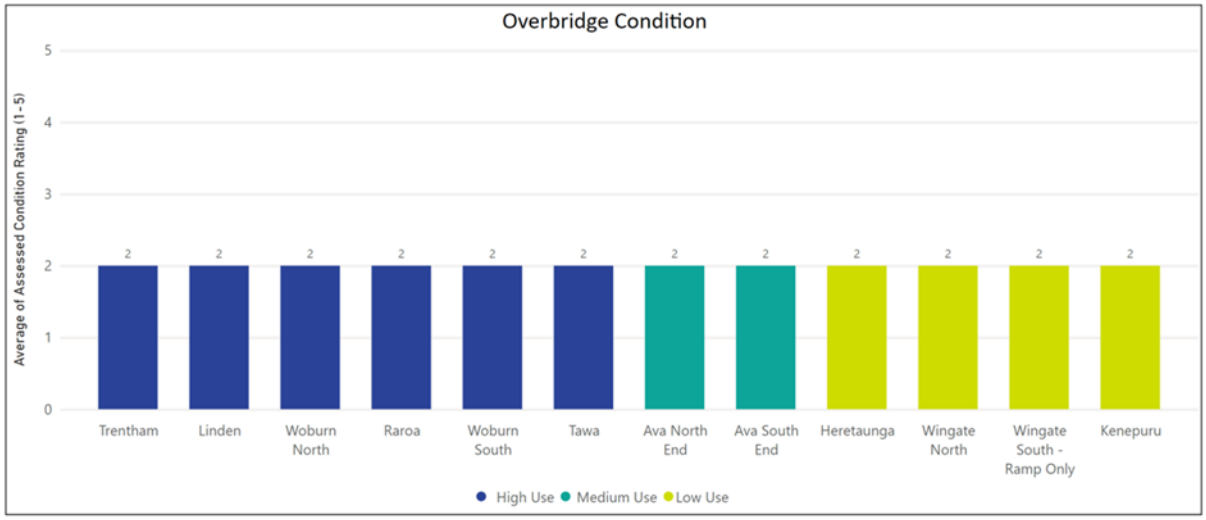


Figure 51: Pedestrian overbridge condition at 30 June 2024

Station subways

Our station subways have historically had very little maintenance. However, since ownership was transferred to us, we have invested in resolving deferred maintenance issues. Our station subways are condition assessed on factors such as painting, floor coverings, lighting, and structural integrity. There were a number of subways in poor condition, and these have all have been cosmetically refurbished as part of our two-year cosmetic improvement programme.

Following community engagement to create a brighter and safer subway environment at Naenae, Epuni and Pomare stations, a seismic strengthening and cosmetic refurbishment programme of works was completed at the end of 2023/24. This included the installation of CCTV cameras, PA systems, improved lighting, new flooring, and wall coverings.

Subway strengthening and condition improvement work is programmed to conclude in 2024/25 at Taita and Petone stations.

The refurbishment trigger for station subways is condition 3. As mentioned before, we are taking a long-term view of options for Waterloo Station to ensure the right solution is found prior to upcoming planned maintenance work on the spaceframe structure. We

have a programme of work scheduled to improve Paramata Station condition. This is subject to funding from the NLTF.

Figure 52 shows the overall condition profile of the station subways.

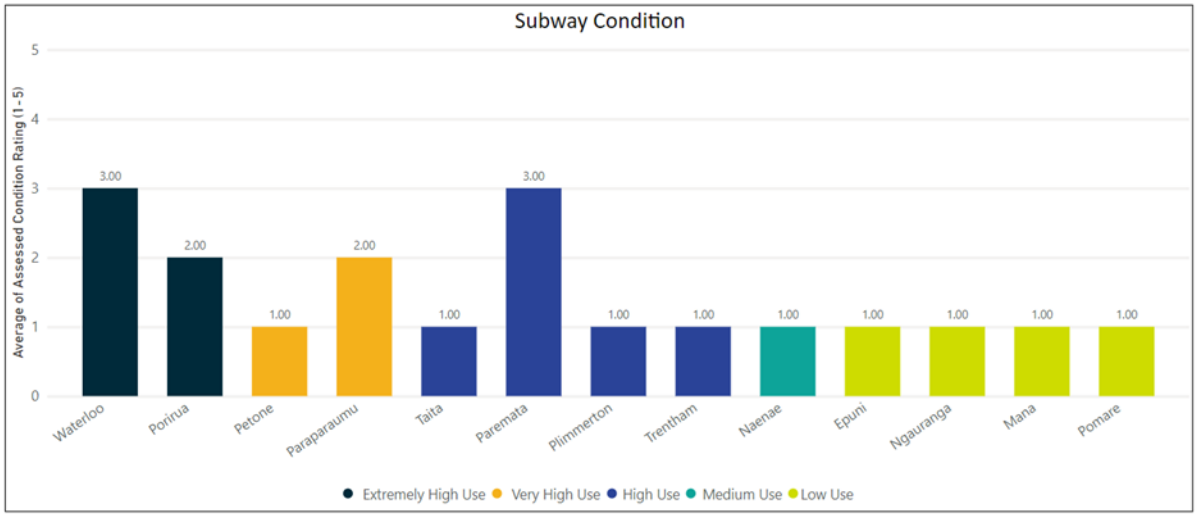


Figure 52: Subway condition 30 June 2024.

Station Park and Ride

Overall, our Park and Ride facilities are in good condition.

The refurbishment trigger for Park and Ride assets is condition 4. We have a programme of work in place to resurface the parking areas that are rated in condition 4.

Figure 53 shows the overall condition profile of our station Park and Ride carparks.

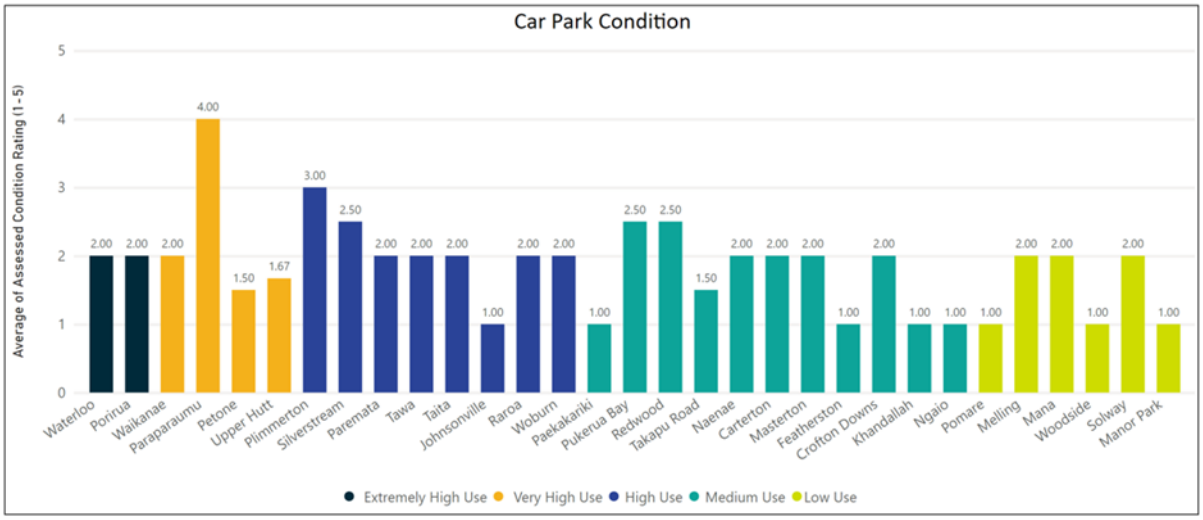


Figure 53: Carpark condition 30 June 2024

Station security assets

Figure 54 shows the condition of our station security assets at each location based on average condition of equipment at each location. This includes CCTV cameras, PA system, emergency points, and network hardware.

A renewal programme has been delivered over the last two years to upgrade our security assets to a good condition.

The replacement trigger for station security assets is condition 4.

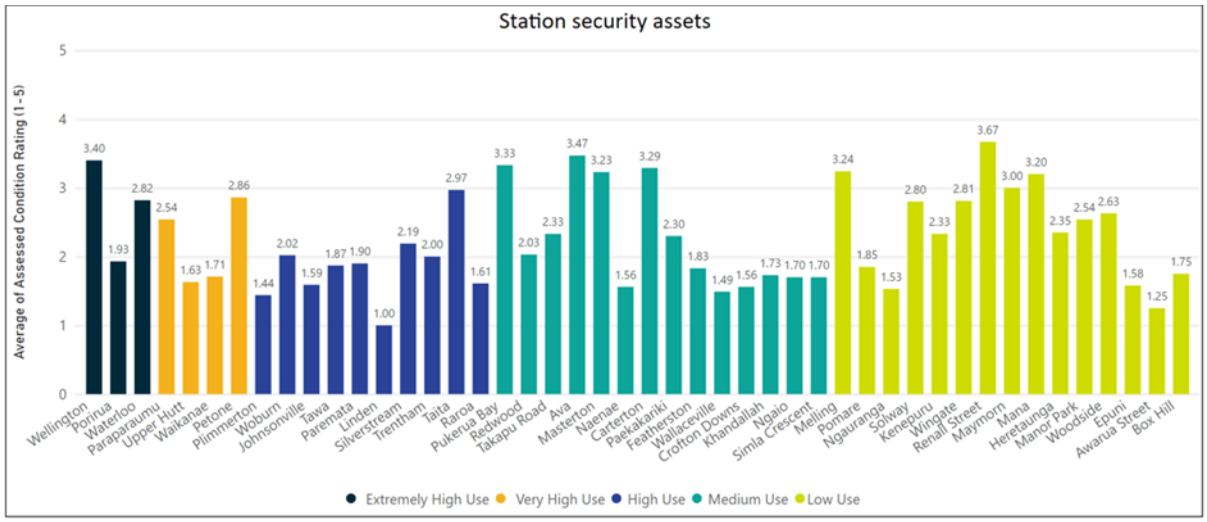


Figure 54: Station security assets condition 30 June 2024

Station Lighting

Figure 55 shows the condition of our station platform, access and Park and Ride lighting. Overall, our station lighting is in reasonable condition with a renewal programme have been delivered and all remaining poor condition lighting has been upgraded to LED. The replacement trigger for station lighting is condition 4.

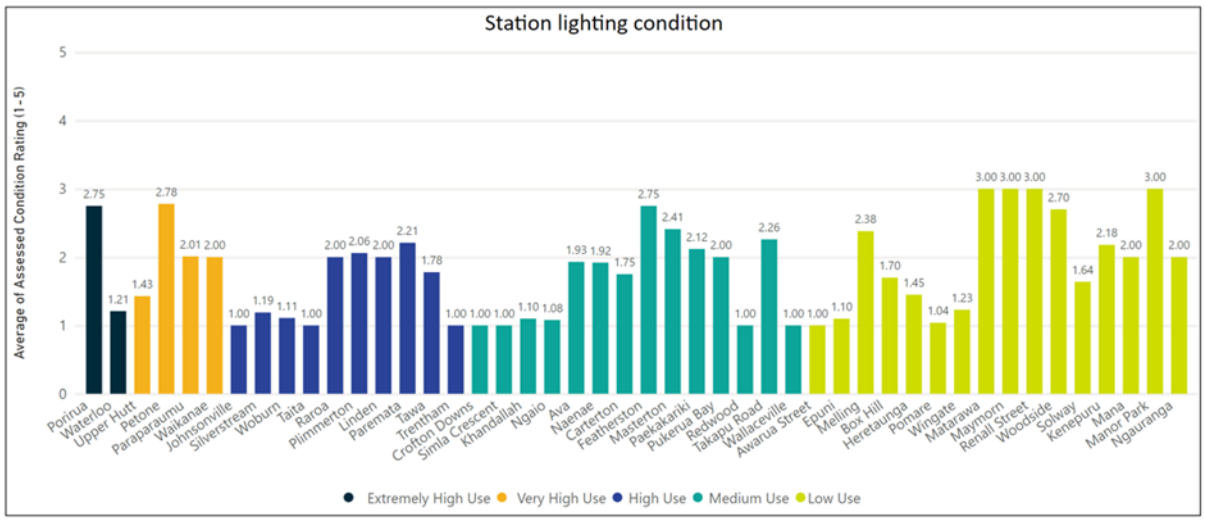


Figure 55: Station lighting condition

The condition is based on light fittings and does not currently consider pole condition. We plan to capture pole condition over the next three years.

Station Signage

Figure 56 shows the overall average condition of our signage at each location. Most of our signage is in good condition. We have just completed upgrades to our BRT and train station way-finding signage assets to improve customer experience. The replacement trigger for station signage is condition 4.

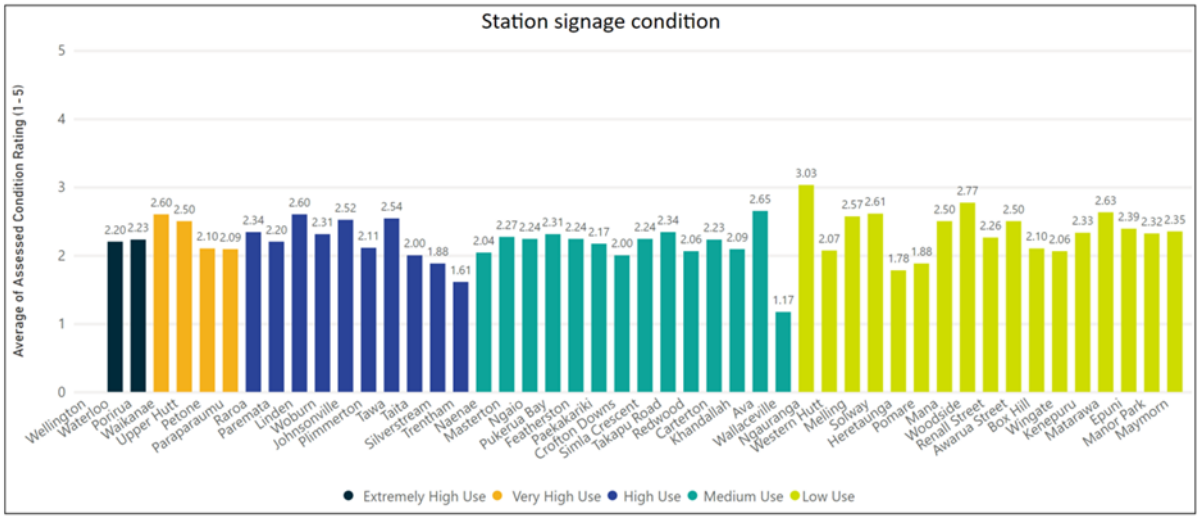


Figure 56: Station signage condition 30 June 2024

Station Bike and Ride

Several of our Bike and Ride facilities are older assets, with most of them having an average of seven years life left. However, the majority are in good conditions with many facilities having been replaced by sheltered double tiered bike racks in the last three

years at Masterton, Solway, Carterton, Waikanae, Paraparaumu, Redwood, Woburn, Paekakariki and Porirua stations.

The replacement trigger for station bike and ride is condition 4 based on prioritisation and utilisation.

Figure 57 shows the condition profile of the Bike and Ride facilities at our stations.

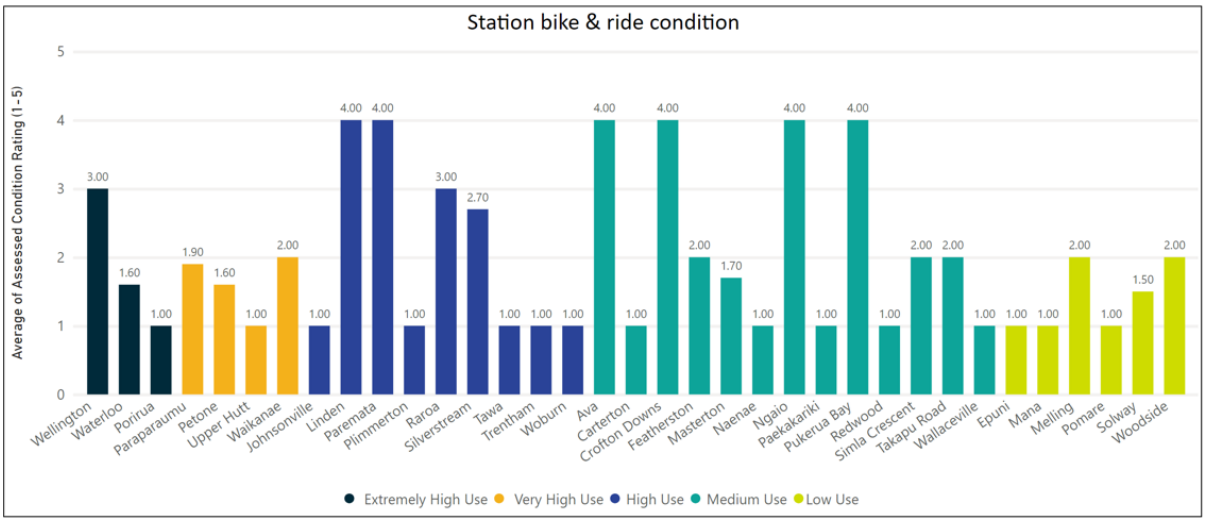


Figure 57: Bike and Ride condition 30 June 2024

Station seats and litter bins

Our station seats and litter bins are generally in good or very good condition as shown in Figure 58. The replacement trigger for station seats and litter bins is condition 4.

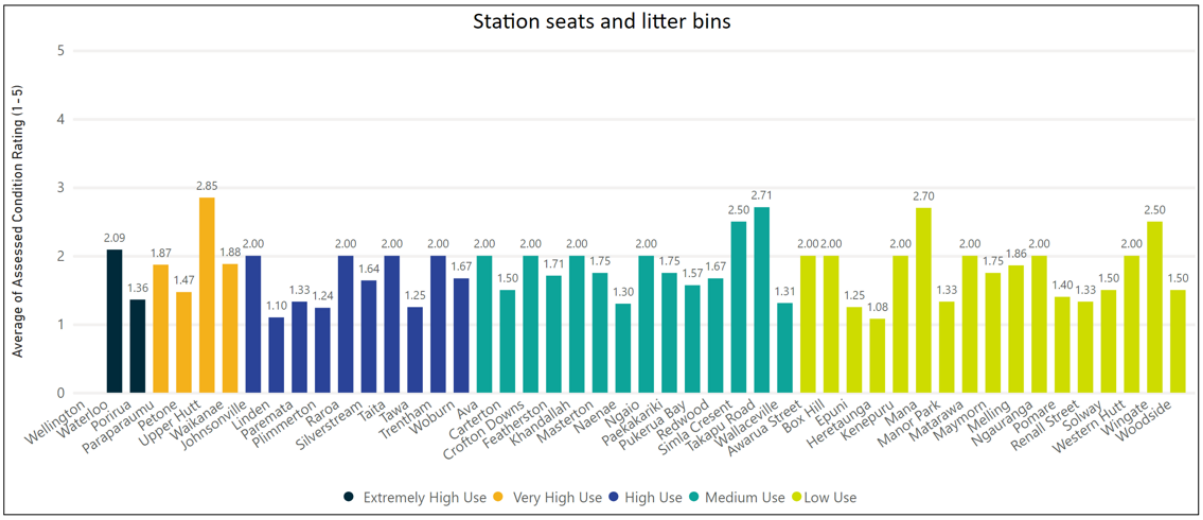


Figure 58: Station seats and litter bins condition 30 June 2024

Station access assets

Figure 59 shows the condition of our access paths at each site location, based on the average condition of equipment installed at that site location. The refurbishment trigger for station access pathways is condition 3.

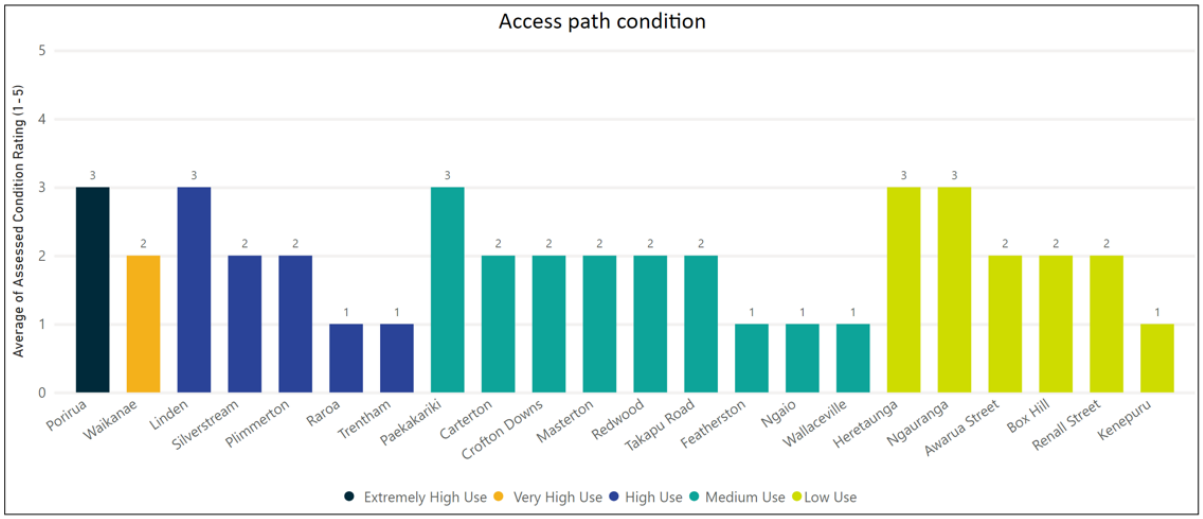


Figure 59: Station access path condition 30 June 2024

Figure 60 shows the condition of our fences and barriers. The replacement trigger for station fences and barriers is condition 4.

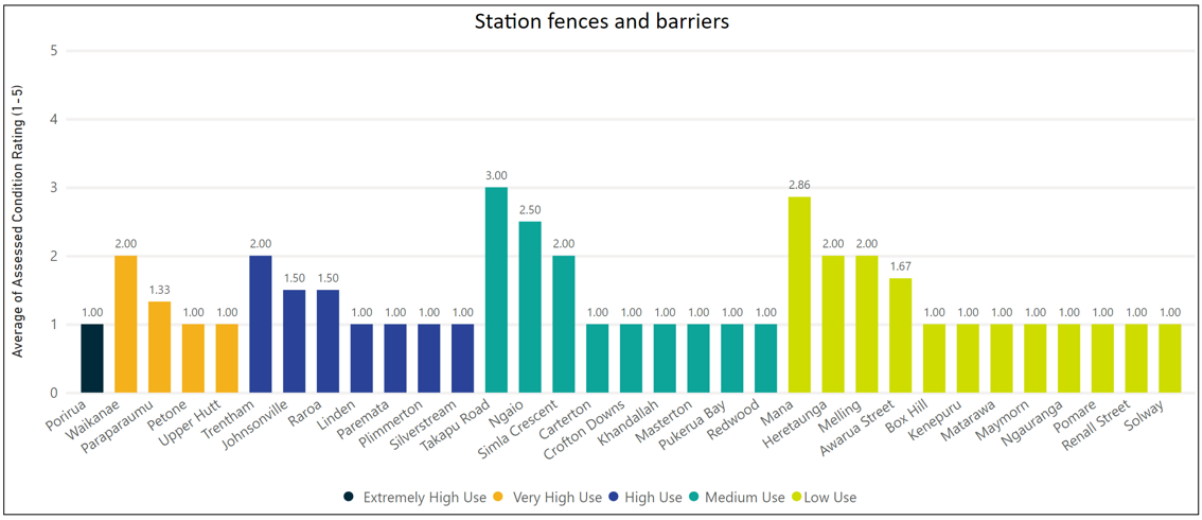


Figure 60: Station fences and barriers condition 30 June 2024

Asset risk

While station infrastructure assets are important assets from a rail service perspective, the likelihood and overall risk of any single asset having significant impact to the overall

rail service is small. However, it is more likely that service to localised communities could be impacted by infrastructure failure if risks are not appropriately managed. There are several risks that have the potential to affect the function of these assets. These are seismic vulnerabilities, asbestos management, corrosion management and storm event management. The following describes these asset risks and their mitigations for our station infrastructure assets. These risks manifest across the asset base to varying degrees.

Seismic vulnerability

Seismic risk needs to be managed with respect to our assets. Whilst insurance plays a key role in mitigating the financial risks, the likelihood of us being able to quickly recover asset performance after a major seismic event is low.

A building with a seismic rating of less than 67% of the New Building Standard (NBS) is deemed to be an “earthquake risk”. A rating less than 34% of the NBS deems the building is “earthquake prone.” Our policy is that all our rail infrastructure buildings meet the minimum seismic rating of 67% of the NBS.

Station buildings

Woburn and Paraparaumu northbound buildings are currently under construction to bring the seismic rating up to the 67% NBS rating. The station buildings on the Johnsonville line and Woodside Station buildings are currently being investigated by an Engineer Consultant. Melling station is being moved through the Riverlink Programme.

Our building seismic ratings are shown in Figure 61.

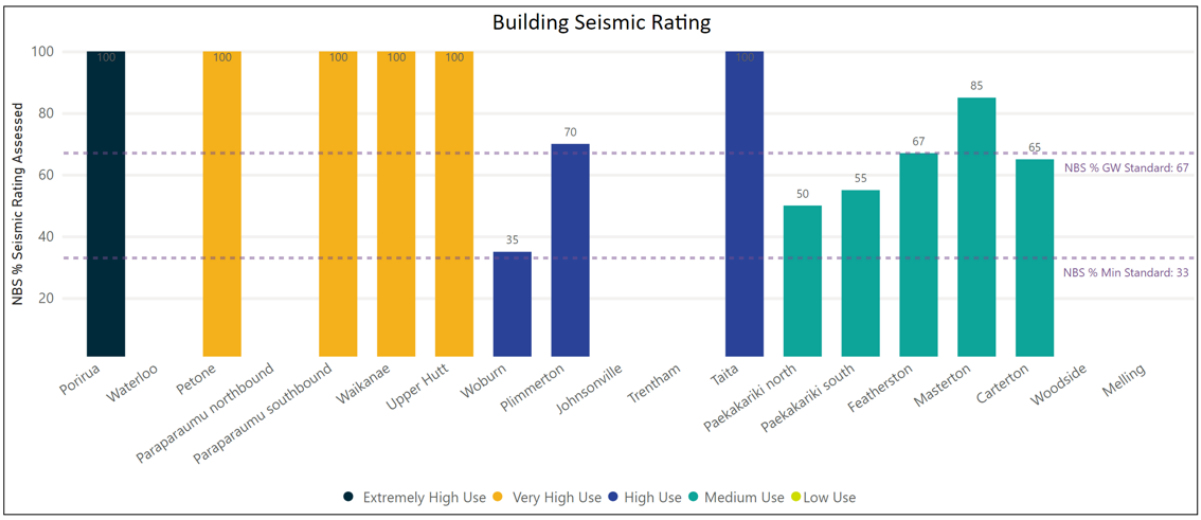


Figure 61: Current building seismic rating [9]

Pedestrian overbridges and subways

We have confirmed through an NBS assessment report that two of our bridges exceeds the 67% seismic rating standard. While we are confident that the remaining bridges also meet or surpass this threshold based on initial assessments and recent upgrade works, we are currently in the process of obtaining and finalising the necessary documentation to formally confirm these ratings. As a result, the seismic ratings for these bridges are not yet displayed. We will update the ratings as the documentation becomes available.

Figure 62: Wingate North pedestrian overbridge – post seismic strengthening improvements

[9] Waterloo, Paraparaumu northbound, Johnsonville, Trentham and Woodside are awaiting assessment for NBS rating.

All our subways have had a detailed seismic assessment completed and the majority have achieved the minimum requirement of 34% of the NBS. A subway renewal programme has strengthened all but three subways to 67% of the NBS rating. The Petone and Taita station subways are currently undergoing construction to achieve the 67% NBS rating or greater. The strengthening of the Porirua Station subway ramps is subject to funding allocation from the NLTF.

Our subway seismic ratings are shown in Figure 63.

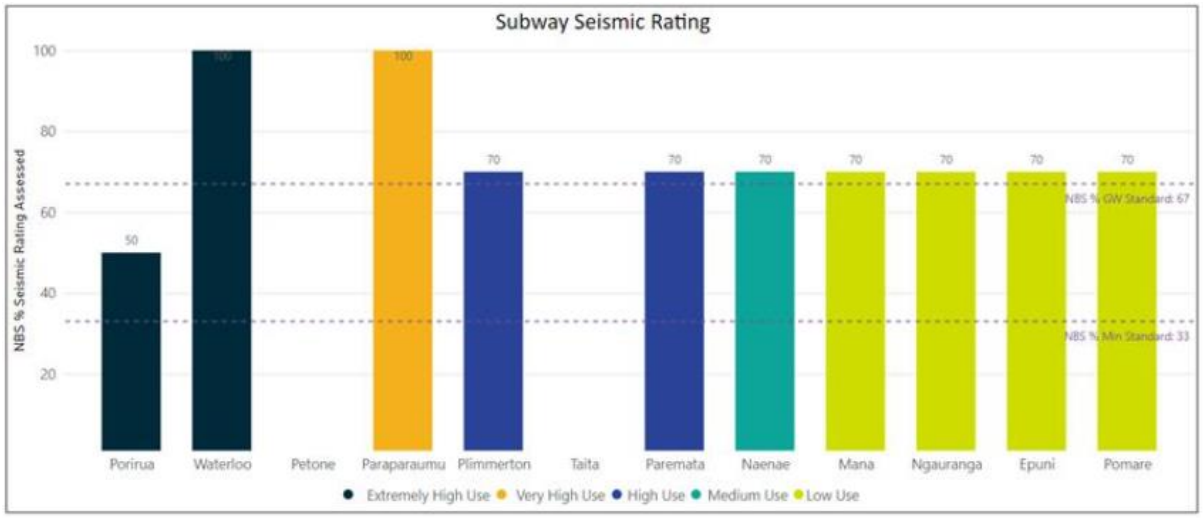


Figure 63: Current pedestrian subway seismic rating[10]

Asbestos management

Due to the age of our station buildings and shelters, several of our station buildings and shelters contain asbestos. We manage the asbestos risk at our stations in accordance with the Health and Safety at Work (Asbestos) Regulations 2016 to ensure the health and safety of our customers, service providers and the public. We have a register of our assets which contain asbestos, detailing the location and state of the asbestos across our sites. This is regularly monitored and reviewed through condition inspections.

We have an Asbestos Management Plan in place to ensure the most appropriate treatment has been identified. Treatment measures involve either elimination or appropriate isolation measures (encapsulation). Almost all our assets have now had the asbestos encapsulated to ensure the risk is minimised. We have an active programme of work to remove asbestos, where practical, to eliminate the risk at that location. In recent years, both Linden and Pomare stations have undergone asbestos removal, and the buildings were demolished as part of the larger upgrade projects.

[10] Petone and Taita station subways are currently being upgraded and therefore are excluded from this chart.

We use GWRC's standard operating procedure to manage asbestos under the hazard management policy. We work to ensure all practicable steps are taken to ensure that exposure to asbestos is kept and maintained as low as possible and under no circumstances exceed the workplace exposure standards.

Storm events

Storm events can cause permanent damage to our station infrastructure assets. Flooding is a risk for our subway assets either due to insufficient capacity of the drainage and pumping systems, or failure of the drainage and pumping systems within the subways. As a result, a regular maintenance plan is in place. All our subways have had sump pump level sensors installed which will send out an alert when the pumping system is not operating. This will allow us to be more proactive in responding to flooding during large storm events. The frequency and severity of these storm events are increasing due to climate change and while rail station infrastructure is insured, the deductible is set at a level that is unlikely to aid the financial loss as a result of flooding.

Asset Degradation - Coastal Environment - Corrosion

Due to the coastal environment, several stations experience higher than typical asset degradation, such as Paremata and Ngauranga. This is a key factor that can considerably shorten the life of station assets if appropriate maintenance activities do not occur. Marine deposits such as salt spray, sand, and seaweed, are regularly removed through a building wash down programme but these stations still require the regular application of corrosion protection products to help reduce the whole of life costs.

Fire Damage

Fire is a significant risk when it comes to managing our building assets, particularly at stations that are no longer staffed but have waiting areas and toilets open to the public. While insurance plays a key part of mitigating the financial risk, the likelihood of us being able to quickly recover our asset performance after a major fire is low. This is particular of concern with our heritage building assets built mostly from timber and weatherboards which likely would not be able to be rebuilt losing a key piece of railway history.

To mitigate the risks of fire we have installed increased fire monitoring equipment across many of our stations, with plans to extend this to other building assets. These systems include new control panels capable of connection with Fire and Emergency, along with additional smoke and thermal detectors, a call point for manual alarms and evacuation sounders.

Asset performance

Our year-to-date performance against our customer satisfaction and asset-related targets show that we are generally trending positively to achieve them. In line with this, our rail infrastructure assets have generally performed well.

There are instances of slips, trips, and falls across our network. We continually review the occurrence of these and address any key hotspots. For example, we salt pedestrian overbridges and access paths to mitigate the risk of slips.

Station buildings and shelters

Our station building assets are generally functional. However, with the significant growth in patronage, the shelter provided by our buildings and shelters is insufficient to provide adequate protection from the wind and rain while waiting for our rail service. As a result, increased shelter is required in several locations.

The design and layout of a few of our buildings and shelters are sub-optimal to promote the feeling of personal safety and security. Hence, crime prevention through environmental design (CPTED) enhancements are needed.

Some of our station buildings are either disused and boarded up or not configured to be optimally used. We are progressively upgrading them so they can be leased by other organisations such as small businesses or community groups. This approach has been effective in creating community ownership, reducing vandalism and crime, and ultimately improving customer safety due to passive surveillance.

Station pedestrian overbridges

Generally, our overbridges are in a basic functional state, with reliable availability.

Many of our pedestrian overbridges would not meet today's building or disability construction standards, particularly with respect to ramp gradients and step dimensions. Due to the geometric constraints, it is cost prohibitive to rectify these issues in the short term. Opportunities to improve accessibility will be assessed and will be included in a future programme to improve accessibility across stations as part of Metlink's Accessibility Action plan.

Many structures do not meet accessibility guidelines in terms of colour contrast and handrail dimensions and placement. A programme of works is being developed to rectify these issues.

Station pedestrian subways

Generally, our subways are in a basic functional state with reliable availability.

Many of our pedestrian subways would not meet today's building or disability construction standards, particularly with respect to ramp gradients and step dimensions. Due to the geometric constraints, it is cost prohibitive to rectify these issues in the short term. Opportunities to improve accessibility are being assessed and will be included in a future programme to improve accessibility across stations as part of Metlink's Accessibility Action plan.

Several of our pedestrian subways have poor lighting which decreases the perception of personal safety while in the subways, however this is being addressed through our subway cosmetic improvement programme.

Station Park and Ride

The functionality of our Park and Ride facilities is good, and are highly utilised. Pre-Covid-19 the majority of Park and Ride facilities were at capacity part way through the morning peak.

The quality of the Park and Rides is also adequate. We consider that our Park and Ride assets are safe. However, we recognise that due to over demand for Park and Ride services, people do park in unallocated parking areas, which can affect visibility within the Park and Ride.

We are continually exploring better placement for accessible parking spaces and are developing a programme for dedicated carpool spaces and improved access through Park and Ride to encourage the move from private vehicle to public transport.

As we renew Park and Ride facilities, we have a policy of installing best practice on site such as storm water treatment technologies (for example rain gardens) to avoid harmful discharge into our waterways.

Station security assets, lighting, and signage

Our CCTV system is considered reliable. We have a regular, six-monthly preventative maintenance programme in place. The 24-hour 7 day a week monitoring of the cameras across the network is proving effective in discouraging vandalism and improving the perception of safety across the network. The CCTV system provides coverage of most of the network except for Matarawa and Western Hutt.

We consider our lighting assets as a key component for maintaining safety and security. As such, significant effort has been put in the last few years to improve lighting performance and asset condition.

Lighting is one of the most important factors in the principal of CPTED. CPTED lighting principles adopted in our lighting upgrades are set out below:

- lighting design must avoid creating blind spots and coverage must include all critical areas.
- area such as pathways, stairs, entrances/exits, and parking areas must be well lit.
- lighting needs to be designed so as to avoid creating blinding glare or deep shadows.
- shielded or cut-off luminaires must be used to control glare.
- lighting must be placed along pathways and other pedestrian-use areas at proper heights to light people's faces.

The quality of lighting varies with age and condition. Many of the older lights emit less light and have poorer lighting efficiency than the newer ones. Lamp reliability is typically described by the average rated life in hours. This can vary considerably depending on the technology used. We have implemented LED technology to reduce energy consumption, as well as maintenance costs because of the longer life LED bulbs. This planned replacement can enable equipment and energy savings as lighting designs can be reassessed to reduce compensatory lighting, typically applied to overcome poor lighting.

Our lighting is vulnerable to vandalism; this affects reliability. Lighting is regularly checked as part of routine maintenance by contractors at each site and complaints are addressed as received.

The reliability of our signage mainly relates to the readability of the sign and response time for replacement if vandalised or damaged. This is undertaken by the regular maintenance and inspection programme.

Our rail platform signs are not directly lit at night. Passenger information systems are now provided on all trains as an alternative.

The graphics tend to be affected by UV light, which significantly reduce the useful life of the assets at sites with high UV light exposure.

Station Bike and Ride

Our station Bike and Ride is reliable and has good availability. Any new assets installed are completed before the old assets are removed. The removed assets, if in an acceptable condition and design, are re-purposed to stations which currently don't have bike parking.

At stations where there are good cycling routes for access, our Bike and Ride facilities are well utilised and this is demonstrated at stations such as Paraparaumu and Porirua, where most cycle facilities are often at peak occupancy.

Several of our Bike and Ride assets are the older model cycle cones or 'toaster racks'; these are not favoured by our customers as they can cause damage to bicycles through poor frame support. These aging assets are progressively being replaced with new Bike and Ride double tiered facilities where appropriate. Other options are being explored for stations where there is insufficient space for the double tiered facilities.

As we install these new assets, we are also installing dedicated CCTV and lighting. We also ensure they are placed in areas with good passive surveillance and easy access for nearby cycle or shared pathways. We also monitor the demand and relocate the assets as required.

Station access assets

The fences along our access paths generally consist of two types, known either as a 'Type A' fence or a 'Type B' fence as shown in Figure 64 and Figure 65. 'Type A' is a vertical paling fence, and a 'Type B' fence is a simple timber post and rail fence. There are many 'Type B' fences on our access paths. We are considering upgrading them to a 'Type A' to prevent small children from either going under them or climbing over them.

Many of our fences are made from steel wire mesh and need to be able to withstand the saltwater environment in the Wellington region.

Figure 64: 'Type A' fence

Figure 65: 'Type B" fence

We consider the operation of our access paths to be reliable. Several our access paths cross the rail lines making them a safety hazard. KiwiRail are improving these access ways by installing automated level crossing gates.

Asset information

We are investing time and effort in improving our accuracy and knowledge of our data. However, further improvements in the data quality and the analysis of this data are an ongoing process. Our new Enterprise Resource Planning system, Ngātahi, went live in February 2022, and we are continuously working to improve our data quality and incorporate it into a single system.

Lifecycle management and activities

Our asset management approach for our station infrastructure assets is to maintain, build new, and uprate existing assets so that we can provide a safe, high quality, fit-for-purpose station infrastructure at least lifecycle cost. To enable deferral of major investment until maintenance is no longer an economic solution, we address localised deterioration with repairs and minor replacements.

We apply national and regional strategic priorities and our station infrastructure strategic objectives to our planning, to ensure our investment is targeted and prioritised so we can meet our key objectives and desired Levels of Service. We also involve local communities in aspects of our renewal projects. For example, Plimmerton Station displays local schools' artwork and the Taita pedestrian subway has artwork from a local artist. This has helped reduce incidences of local vandalism.

Our asset management approach reflects our lifecycle activities of planning, deliver, operate, maintain, and divest or dispose. Each of these are discussed below.

Planning

Our planning activities include:

- making provision for increasing service frequency which may result in planning for new assets, refurbishing existing assets, or relocating assets to where they are better utilised.
- regularly reviewing patronage demand and ensuring that sufficient provision of shelter from the wind and the rain is available for peak demand.
- strengthening all buildings and structures to at least 67% of the NBS.
- undertaking risk mitigation programmes for specific hazards e.g. our Asbestos Management Plan.
- ensuring our stations and facilities are regularly cleaned and free of graffiti and vandalism to ensure station infrastructure provides a safe and accommodating environment.
- renewing and updating the suite of information provided at stations including timetable, real time service information, ticketing, service disruption information, and wayfinding information for both the station and the community in which the station is located.
- upgrading facilities during renewal and improvements activities to improve accessibility.
- ensuring our stations with Park and ride assets are managed to balance supply and demand so that capacity is at 85% peak occupancy by 9am on a typical business day.
- working with communities and partnering with Mana Whenua to foster a sense of community ownership.

Table 23 provides an overview of the planning standard of facilities we work towards for each station category.

Table 23: Planned facilities available at each station category

	Extremely High Use **(>15000 passengers/ week)**	**Very High Use** **(>10,000 and <15000 passengers/ week)**	**High Use** **(>5500 and <10000 passengers/ week)**	**Medium Use** **(>3500 and <5500 passengers/ week)**	**Low Use** **(<3500 passengers /week)**
Sufficient shelter from weather for peak use	Yes	Yes	Yes	Yes	Yes
Ticket office	Yes	Yes	No	No (except on Wairarapa Line)	No

	Extremely High Use (>15000 passengers/ week)	Very High Use (>10,000 and <15000 passengers/ week)	High Use (>5500 and <10000 passengers/ week)	Medium Use (>3500 and <5500 passengers/ week)	Low Use (<3500 passengers /week)
Internal Waiting Room	Yes	Yes	No	No (except on Wairarapa Line)	No
Toilets	Yes	Yes	No	No (except on Wairarapa Line)	No
Bus Inter Change	Yes	Yes	No	No (except on Wairarapa Line)	No
Bus Connection	Yes	Yes	Desired	No (except on Wairarapa Line)	No
Snapper Top Up	Yes	Yes	No	No (except on Wairarapa Line)	No
Duress Help Points	Yes	Yes	Yes	Yes	Desired
Park and Ride	Yes	Yes	Yes	Desired	Desired
CCTV - at Station	Yes	Yes	Yes	Yes	Desired
CCTV - at Park and Ride	Yes	Yes	Yes	Yes	Desired
Accessibility Compliant	Yes	Yes	Yes	Desired	Desired
Cycle Storage Locker	Yes	Yes	Yes	Yes	Desired
Cycle Cones	Yes	Yes	Yes	Yes	Yes
Rubbish Bins	Yes	Yes	Yes	Yes	Desired
RTI	Yes	Yes	Yes	Yes	Desired
Overall Condition Grade of Station	<3.0	<3.0	<3.0	<3.0	<3.0

Decision-making process

The work programme and corresponding investment for station infrastructure assets is determined by applying our strategic objectives and strategies to ensure that funding is allocated appropriately to address areas with greatest need.

Wellington, Porirua & Waterloo stations are designated as “Major Bus-Rail Interchanges” and Waikanae, Paraparaumu, Upper Hutt, Taita, Petone and Johnsonville stations are designated as “Bus-Rail Interchanges”. Any enhancements or renewals at these sites require increased consideration with respect to integration with the bus facilities within the interchange.

Capacity Management - current and future requirements

With the growth in patronage, the shelter provided by many of our buildings is insufficient to provide adequate protection from the wind and rain while waiting for a train. As a result, increased shelter is required in several locations.

Modelling has been completed to illustrate the current and forecast shortage of shelter capacity at our stations to prioritise investment. This expenditure is incorporated into our investment planning.

With the expansion of the Metlink Network up to Palmerston North on the Manawatu Line, we will need to add Otaki, Levin, Shannon, and Palmerston North Stations into our portfolio. As this stage the ownership model of these stations has not been established. The capital investment to upgrade these stations up to Metlink standard has been approved as part of the Lower North Island Rail Integrated Mobility Programme – jointly funded by the Crown, Waka Kotahi NZTA, Horizons Regional Council and GWRC. The ongoing maintenance and renewal of these stations has been included within this Asset Management Plan.

Cost Estimation

Most of the maintenance and renewal activities that are required to be undertaken are specific to our ‘brown field’ sites and the rail corridor (which has access limitations, and high health and safety management expectations). As such, cost estimation of future projects has a high degree of uncertainty.

Cost estimation for planning is established through knowledge of the current market, and previous activities of similar nature. We typically procure contract maintenance, renewal, and improvement activities contracts, with standard rates and these provide a level of certainty in the short to medium term.

Deliver

Within the Deliver lifecycle stage, we procure, construct, and commission the programmes of work that have been identified within the Planning stage. Where applicable, works are integrated into a wider programme schedule, and this incorporates other works at the same locations for resource and cost efficiency.

The activities are typically set up and managed as projects using our project management framework. An external engineer to contract is often required for the larger scale infrastructure renewal or new projects.

Procurement

Procurement is undertaken in accordance with GWRC Procurement Policy, Waka Kotahi NZTA's Procurement Rules, and Government Procurement Rules. As a result, contracts more than $200,000 are generally undertaken on an open tender basis, with a quality price assessment process to ensure overall value for money.

Generally, we undertake procurement for multi-year contracts with the ability to extend them if contractor performance is meeting expectations.

Operate

From 3 July 2016, we commenced a 9+6-year performance-based Partnering Contract with Transdev Wellington Ltd (Transdev) to be the rail operator for our region.

The Partnering Contract includes several provisions to provide resources at several key stations. These are Wellington Porirua, Paraparaumu, Waikanae, Petone, Waterloo, Upper Hutt, and Masterton stations. The remainder of our stations are unmanned; however, the Partnering Contract also resources a 24 hr / 7 day per week rail monitoring centre, which uses the >800 cameras across the rail network to actively monitor and manage asset and personal safety across the network. In addition, we have a roving security presence which helps to identify and/or prevent issues.

Our station cleaning and minor maintenance contract requires daily visits to undertake cleaning and identify and promptly remedy any vandalism.

Maintain

Maintenance activities for our station infrastructure assets are undertaken through various maintenance contracts. Annual maintenance inspections are undertaken for all assets, and corrective planned maintenance works are undertaken and prioritised in accordance with these inspections.

An overview of our key maintenance contracts for our station infrastructure assets is outlined in Table 24.

Table 24: Station infrastructure key maintenance contracts

Cleaning and minor maintenance	Provision of station cleaning services, and maintenance repairs, for example glass repair, painting, and graffiti removal etc.
Heavy maintenance	Carry out planned station renewals and larger maintenance works such as roof refurbishments.
Maintenance	Carry out planned minor maintenance works.
WoF and fire monitoring	Carry out Code of Compliance checks.
Carpark Cleaning and maintenance	Car park surface repairs/maintenance and undertake routine maintenance such as sweeping, sump clearing and vegetation management for each car park
Lighting Maintenance	Undertake a rolling 10-year bulb replacement program, maintain existing lights, and undertake pole replacements across platforms, accessways and carparks.
Security	Undertakes new installations and maintenance of security (e.g. CCTV) and audio systems (e.g., Public Address & Help Points).

Station buildings and shelters

We have a station cleaning and minor maintenance contract in place to undertake cleaning and minor repairs of the stations including the buildings, shelters, and subways. Although most aspects of maintenance are planned, such as daily cleaning, there is an element of reactive maintenance that includes:

- responding to public inquires
- maintenance to assets that are damaged externally such as vandalism.
- substantial reactive maintenance, which is agreed prior to any works being carried out.

The assets are internally inspected each year and extensively inspected by a third party every 3 years. This enables our detailed 5-year maintenance, renewal, and upgrade program to be re-developed every 3 years and the programme fine-tuned each year.

Station pedestrian overbridges and subways

All maintenance is undertaken through a heavy maintenance contract. Annual maintenance inspections are undertaken for all assets and corrective planned maintenance works is prioritised and undertaken in accordance with these inspections.

Lighting

An annual cleaning, maintenance, and inspection programme has been introduced for our lighting poles and fittings to ensure that issues are identified and rectified early, particularly in relation to environmental and corrosion issues.

Historically, we have undertaken a rolling five yearly bulb replacement programme on all station and car park lighting to minimise the cost and disruption to repair ad hoc bulb failures. This renewal cycle is now extended to a 10-year replacement due to our upgrades to LED fittings, and hence we expect a substantial whole of life cost saving for the asset type.

Station Park and Ride

Maintenance of Park and Ride assets is undertaken through a maintenance contract; activities include:

- an annual clean of each car park;
- 6 monthly sump cleans;
- 3 monthly car park sump cleans;
- maintenance of storm water treatment devices such as upflo filters, and rain gardens;
- monthly vegetation maintenance;
- car park service repairs and maintenance activities.

Car park resurfacing is based on a programme of forecast renewals.

Station security assets

Our CCTV service contract contains a preventative maintenance schedule, which includes the servicing of the CCTV assets on a six-monthly basis. Any reactive maintenance is agreed prior to any works being carried out.

Divest or Dispose

There are currently no plans to divest or dispose of any rail station infrastructure assets. However, prior to investing in a major asset renewal, we review the condition and performance of the existing asset and assess if the asset should be refurbished, or alternatively completely replaced.

Due to the nature of the assets, there is very little opportunity or practicality to sell the assets. Some components can be recycled during the demolition process.

Forecast expenditure

The work programme and corresponding expenditure for station infrastructure is based on identified needs and is derived from the expenditure in GWRC's Long Term Plan (LTP) and Regional Public Transport Plan (RPTP). At the time of writing, we have not received clarity on funding from the National Land Transport Fund (NLTF). If the funding from the NLTF changes from that allowed for in the LTP, the investment plan presented within this ACP will be reviewed and re-prioritised.

The key investment drivers for our station infrastructure are to provide:

- clean, functioning, stations with sufficient shelter, and seating capacity for the projected number of customers
- relevant and timely information at our station and providing a safe environment with uniform lighting, and good CCTV coverage
- bike parking facilities which are sufficient and available at all stations
- Park and Ride is managed so that capacity is at 85% peak occupancy by 9am on a typical business day.

Opex

Operational maintenance expenditure for our station infrastructure assets is forecast to remain relatively steady at approximately $6.8m per year over the next 30 years, after the initial climb from $7.5m per year due to the additional stations being added to the portfolio because of Metlink extending rail services to Palmerston North. This operating expenditure covers, costs such as cleaning, rates, lease, insurance, electricity, and planned and corrective maintenance activities.

Capex

The renewal costs for rail station infrastructure are forecast to remain relatively steady at $3.75m per year.

To achieve the customer, experience improvements, growth targets and provide better travel choice, the forecast includes improvements to rail station infrastructure facilities. This includes increased shelter and improvements in facilities while passengers wait for trains, and improved connections between the stations and the community such as improvements to Park and Ride, bicycle storage facilities, and improvements to paths, lighting, security, and general accessibility. Significant improvements to Otaki, Levin, Shannon and Palmerston North as a result of the Metlink service expanding to Palmerston North, on the Manawatu Line are also included.

Figure 66 shows our station infrastructure opex and capex forecast.

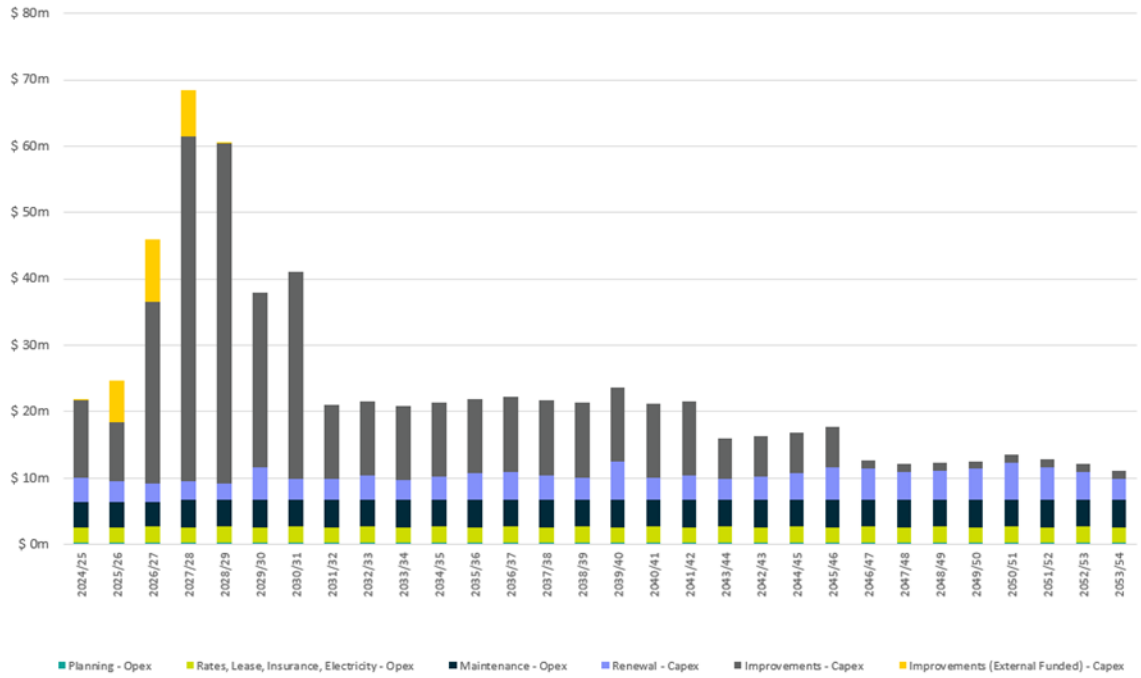


Figure 66: Station infrastructure opex and capex forecast

Rail EMU Maintenance Depot Asset Class Plan

This asset class plan describes our lifecycle management approach for our EMU depot, and the depot plant and equipment assets. These assets are required to support and carryout maintenance activities on our rolling stock assets. The assets in this asset class plan consist of:

- Rail maintenance depot assets:
  - One Maintenance depot building
  - One Wheel Lathe building
  - Two Train wash buildings

- Depot plant and equipment assets:
  - Train wash
  - Underfloor wheel lathe
  - 15-ton gantry crane
  - Train Jacks and control console
  - Wheel drop hoist
  - 1-ton mono crane
  - Scissor lift table
  - Masterton compressor.

Strategic objectives

Metlink's strategic focus areas directly determine how we plan, develop, maintain, and operate our depot assets. Our depot assets provide the facilities and equipment for rolling stock assets to be maintained.

Therefore, our rail depot assets:

	Support **patronage growth** by ensuring facilities are available for trains to be maintained on schedule for safe and reliable journeys.
	Support **Access and Accessibility** by ensuring the facilities are available for trains to be maintained in a fit-for-purpose, safe manner so that the required rolling stock can be provided when needed for scheduled services so customers can access the journeys they need to make.
	Support **Decarbonisation of the Public Transport Fleet** by ensuring the facilities are available for trains to be kept safe and reliable, which encourages people to use public transport over other modes.

To achieve these outcomes, we have established the following asset strategies that guide our planning for rail infrastructure assets. We aim to ensure:

1. The EMU Depot and plant provides sufficient capacity to maintain the required number of trains.

2. The EMU Depot, including building systems, and plant are maintained at required intervals to ensure they are safe and functional to maintain the train fleet.

The investments outlined in this AMP are focused on meeting these objectives.

Asset characteristics and current state

GWRL, a wholly owned subsidiary of GWRC, owns all the assets detailed within this asset class plan. The land these buildings are on is owned by KiwiRail. GWRL has a long-term lease on this land.

EMU maintenance depot

The EMU Maintenance Depot is in the Thorndon (Wellington) rail yard and is used for the routine maintenance for our EMU fleet and heavy maintenance for our rolling stock. The routine maintenance of our Wairarapa carriages is undertaken at a different facility, which is owned and maintained by KiwiRail. We have a licence to occupy this site for the maintenance of these carriages.

The EMU Maintenance Depot is 5,000m2 and includes a five-road maintenance floor and facilities for staff. Other buildings included at the maintenance depot site are a wheel lathe building located approximately 300m north of the maintenance depot, and two EMU train wash buildings, which are semi attached to the main maintenance depot.

It also includes office space and staff amenities.

Figure 67 shows an external and internal view of our EMU maintenance depot facility.

Figure 67: EMU maintenance depot facility

Depot plant and equipment

Specialist depot plant and equipment are needed for the maintenance of our rolling stock assets. Apart from the Masterton compressor, these assets are accommodated within the main depot building and the wheel lathe building.

Train wash

The train wash is located on the wash road adjacent to the EMU depot and is housed in two purpose-built shelters. It comprises a control room, chemical application bay, wash and rinse bay, and underground sump.

The wash is required to meet the cleaning requirements of the EMUs and preserve their stainless-steel body shells. It was selected in conjunction with the train manufacturer during the EMU design phase and construction.

Wheel lathe

The Heggenscheidt underfloor wheel lathe is a computer-controlled, purpose-built, machine for re-profiling rail wheels on rolling stock. It is primarily used for the EMU and Wairarapa carriage fleets but is also used to carry out work for Kiwirail. It is located north of the EMU depot in a purpose-built facility. The wheel lathe is essential plant to maintain the ability of rolling stock to meet the requirements to run on the rail network.

15-ton gantry cranes

The gantry cranes are located within the EMU depot facility over the length of road one. They provide support for heavy maintenance activities and general logistics. In addition to moving parts, they can be used to lift the Wairarapa carriages for heavy maintenance activities.

Train Jacks

The train jacks are required to lift rolling stock for heavy and unplanned maintenance. They can only be used in the EMU depot. They comprise of nine jacks (this includes one spare) and a central control console. Hyundai Rotem purchased another set of train jacks to supplement the GWRL ones. GWRL will purchase these from Hyundai Rotem at the expiry of the operations and maintenance contract.

Wheel drop hoist

The wheel drop hoist is primarily used to replace components installed on the underframe of the rolling stock without the requirement to lift the vehicle. Because of its dimensions, it has limited use on the EMU fleet.

Scissor lift table

The scissors lift table is used in conjunction with the train jacks to replace underframe equipment.

Masterton Compressor

Located in Masterton, this is used to provide pneumatic shore supply to the Wairarapa carriages.

Age Profile and life expectancies

The main maintenance depot building has been added to over the years and has two sections to the one building. There is the 1970's portion, which is one EMU in length and four roads wide, with full roof access on three of these roads. The depot was extended in 2011. The extension is two EMUs long, five roads wide, includes full underframe access, and roof access platforms.

Most of the depot plant and equipment assets were purchased and installed in 2010 during the depot build. The standard planned life of each of these assets is 30 years, with planned routine maintenance being carried out in accordance with the manufacturer's recommendations. The condition of major components is monitored, and renewals are carried out based on condition.

The age, life expectancy, including expected end of life of our Plant and Equipment assets are summarised in Table 25.

Table 25: Age profile, population and life expectancy of depot, plant and equipment

Asset type	Quantity	Current age	Standard base life	End-of life
Train wash	1	12 Years	30 years	2040
Wheel lathe	1	12 Years	30 years	2040
15-ton gantry crane	2	12 Years	30 years	2040
Train jacks	9	12 Years	30 years	2040
EMU wheel drop hoist	1	12 Years	30 years	2040
2-ton mono crane	1	12 Years	30 years	2040
Scissor lift table	1	12 Years	30 years	2040
Masterton compressor	1	15 Years	30 years	2035

Asset type	Quantity		Current age	Standard base life	End-of life
EMU Depot 1970s	1	54 Years	70 Years	2040	
EMU Depot 2010	1	14 Years	70 Years	2080	
EMU Depot New Storage Facility	1	14 Years	50 Years	2060	

Asset condition

We determine the condition of our rail EMU maintenance depot assets by using the condition grade rating system within the International Infrastructure Management Manual (IIMM).

Table 26 describes the condition rating system.

Table 26: Description of condition rating system

Condition Rating	
Rating	**Description of Condition**
1	Very good condition only preventative maintenance required
2	Good condition: Minor maintenance required plus Preventative maintenance
3	Moderate condition: Significant maintenance required
4	Poor condition: Significant maintenance required
5	Poor condition: Unserviceable

Our maintenance depot and wheel lathe building are in reasonable condition. Their size and the nature of the heavy maintenance activities that occur inside them mean they require constant ongoing maintenance to ensure they remain in a serviceable condition.

Figure 68 shows the maintenance depot and buildings condition.

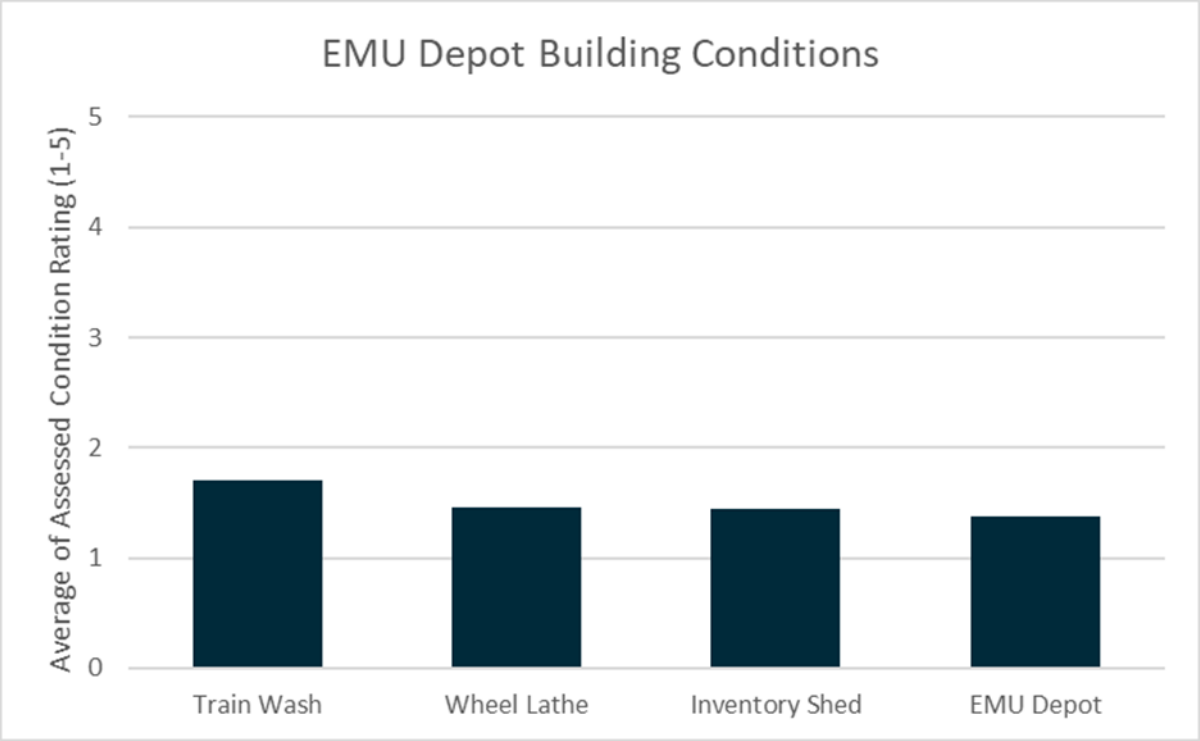


Figure 68: Maintenance depot and buildings condition

Overall, the condition of our plant and equipment assets is good. This is based on WSP Asset Condition Assessment of Priority Plant & Equipment completed in May 2023.

Figure 69 shows the plant and equipment age profile and condition.

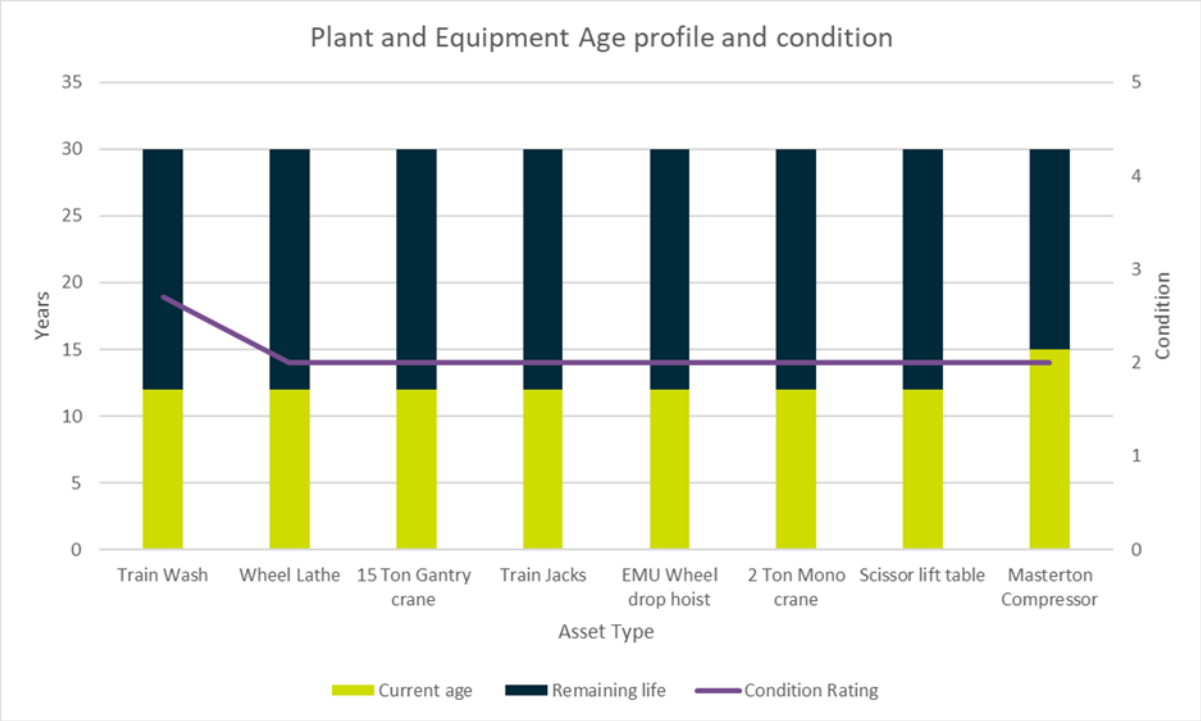


Figure 69: Plant and equipment age profile and condition

Maintain

We contract out the maintenance of the maintenance depot and wheel lathe buildings to our maintenance service provider. All maintenance conforms to agreed service standards outlined in the contract. Although most aspects of maintenance are planned, such as washing facility servicing, testing of gas heaters etc., there is a component of reactive maintenance.

The plant and equipment within the maintenance depots facilities are maintained by Transdev – Hyundai-Rotem through the operations contract to ensure that maintenance is timed to best suit their vehicle maintenance requirements.

The maintenance carried out is in accordance with the recommendations of the original equipment manufacturer's instructions.

Asset risk

These assets are required to support and carry out maintenance activities on the rolling stock assets. Failure of these assets would directly affect the ability to carry out critical maintenance on rolling stock, potentially resulting in under supply for scheduled services.

The plant and equipment assets are considered to have high criticality to maintain rolling stock in a condition that meets customer, performance, and network requirements and, as such, must be maintained to a high level.

As the equipment is specialised, planning replacement and/or major maintenance activities must take into consideration the impact on the ability to deliver passenger services.

Most of the equipment is manufactured outside New Zealand and has considerable lead times and costs to replace. We hold critical spares in stock.

Asset information

Plant and Equipment is managed in the same manner as rolling stock assets within the Maximo MMIS system. Changes to the manuals or maintenance regimes must be done through the approved engineering change process.

The maintenance depot asset information is held in our asset management system, Ngātahi.

Forecast expenditure

The work programme and corresponding expenditure in this ACP is based on identified needs and is derived from the expenditure in GWRC's 20234-2054 Long Term Plan (LTP) and Regional Public Transport Plan (RPTP). At the time of writing, we have not received clarity on funding from the National Land Transport Fund (NLTF). If the funding from the NLTF changes from that allowed for in the LTP, the investment plan presented within this ACP will be reviewed and re-prioritised.

The key investment drivers for our EMU maintenance depot provide for sufficient capacity at the rail maintenance depot and maintained plant to maintain the required number of trains.

Opex

The opex is forecast to remain relatively steady at approximately $0.3m per year until a second, new, rail maintenance depot is built during 2026-2028 to service the low/zero emission new fleet of longer distance trains, when the operational maintenance expenditure increased to approximately $0.5m per year. This operating expenditure covers, costs such as cleaning, rates, lease, insurance, electricity, and planned and corrective maintenance activities.

Capex

The renewal costs are forecast to relatively minimal, with some lumpy expenditure to re-clad the EMU depot, and renewal of plant and equipment. Depot expansions are planned in 2028, and 2040 to align with the enlargement of the rolling stock fleet.

Figure 70 shows our EMU maintenance depot and plant opex and capex forecast.

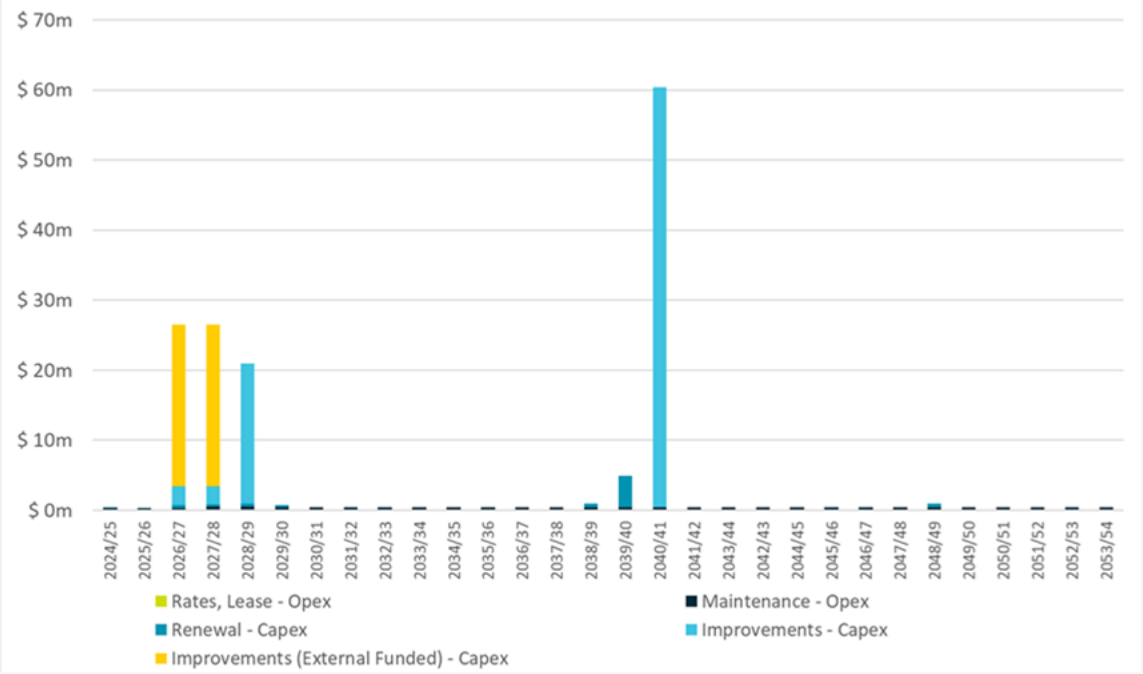


Figure 70: Rail EMU maintenance depot & plant opex and capex forecast

Bus and Ferry Overview

Our bus and ferry portfolio covers the assets we use for delivering our bus and ferry services within the Wellington region. We categorise these assets into three asset portfolios:

- Bus and Ferry Customer Facing assets.
  - These are the infrastructure assets that the public interact with.
- Bus and Ferry Network Enabling assets.
  - These are the infrastructure assets required to support bus operations.
- Bus Fleet, Depots, and EV Chargers assets
  - This includes busses, maintenance facilities, parking and charging infrastructure.

We have an extensive network of bus routes which we set and review on an ongoing basis. Our bus services enable people to move between many origins, including through connector services to train stations. Bus trips make up approximately two-thirds of the Wellington region's public transport trips but only 40% of passenger kilometres.

Our overarching objective is to provide high-quality, fit-for purpose bus and ferry stop infrastructure that retains existing customers and attracts new public transport users. We achieve this by:

- providing an accommodating, correctly sized environment to wait
- ensuring the stops and shelters are well designed for the vehicles using the stop
- ensuring the stops and associated infrastructure are accessible, safe, and affordable.
- placing the stops at destinations to encourage multimodal access and connectivity between our public transport network and the communities we serve.
- ensuring that accessibility and safety is incorporated in the planning and provision of all our bus and ferry stop infrastructure.
- ensuring facilities and infrastructure are correctly placed and sized to support operational requirements.
- ensure busses are clean, reliable, safe, and accessible and are fitted with accessories required to support active modes of transport.

Most of the buses currently operating on our network are diesel powered; however, we are progressively replacing these with electric buses as we implement our strategic priorities of decarbonisation and climate change mitigation. Therefore, an important focus for our operational and asset planning is to ensure we have sufficiently resourced

bus depots and bus layovers to service and accommodate an increasingly electrified fleet.

A ZEB roadmap is currently being developed; this will outline the most feasible plan for transition to a full ZEB fleet across the region looking at costs, benefits and timings to maximise the emissions reductions. Once it has been completed, we will include it into our future AMP, which will also identify the optimal strategy for charging.

Core layover areas in the region are under pressure. As we acquire more fleet to support a growing network, and increased patronage demand, there will be increasing demand for additional layover space. To continue to provide core services to the wider public transport network new bus layover areas are required. A recent layover study for the CBD has identified several areas that will be coming under pressure in the coming years. Further analysis is planned to identify the best strategy to alleviate the pressures, whether this is achieved through service changes or additional infrastructure.

To be strategic in our planning and provision of world-class public transport, we need to have control of critical network enabling infrastructure such as layovers and depots. This is to ensure critical assets remain available in the future for public transport use.

Through the LTP consultation period, positive feedback was received on the Public Transport Asset Control Strategy which has subsequently been adopted by Council. This strategy provides that GWRC will increase its control of public transport assets over the long term to ensure it can meet its decarbonisation objectives through facilitating a move from private vehicle to public transport. The first set of investments in the strategy's implementation roadmap relate to increasing GWRC's control of strategic bus depots as these require significant long-term investment and, if operator controlled, can reduce competition in future bus tenders. This strategy would fundamentally change the status quo in terms of contracting, and financial forecasting.

Our ferry provides services between Days Bay, Seatoun, Queens Wharf, and to the Department of Conservation reserve on Matiu Somes Island. While our ferries have a small share of the total public transport trips in the region, they provide a valuable niche service for commuters and visitors. Deployment of the innovative new electric ferry, the first in the southern hemisphere, has enhanced the sustainability and customer experience of this service.

Expenditure

The bus and ferry work programme and corresponding expenditure in this AMP is based on identified needs and is derived from the expenditure in GWRC's 20234-2054 Long Term Plan (LTP) and Regional Public Transport Plan (RPTP). At the time of writing, we have not received clarity on funding from the National Land Transport Fund (NLTF). If

the funding from the NLTF changes from that allowed for in the LTP, the investment plan presented within this ACP will be reviewed and re-prioritised.

The expenditure covers the opex and capex, of customer facing, network enabling and growth assets for our bus fleet and depot assuming the current PTOM contracting model and owning the southern depot.

The key investment drivers for our bus and ferry infrastructure are to improve customer experience and promote the shift from private vehicle to our public transport network.

Our total expenditure forecast for the next 30 years is $3.86 billion as shown in Figure 71.

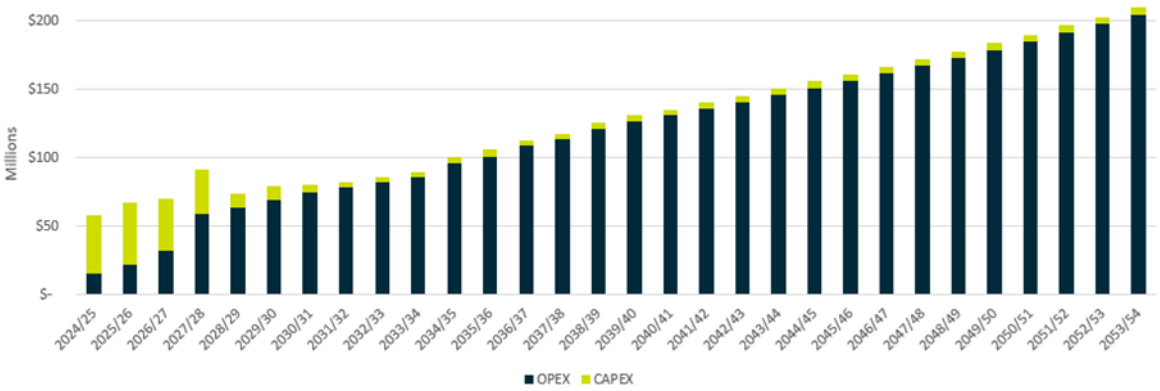


Figure 71: Bus and ferry portfolio total expenditure

Opex

The opex forecast for bus and ferry assets is **$3.567b** over the 30-year period. The bus and ferry asset opex may change over this planning phase depending on the outcome of asset ownership strategy decisions. If asset ownership of fleet, depot and charging infrastructure (or any combination of) is introduced a portion of the current opex forecast may change to capex.

The asset opex forecast covers asset studies and investigations, data collection and management, signage changes, cleaning, maintenance, and leases for our assets and for those that form an integral part of the bus network. It also includes the costs related to assets included within the current PTOM contracts.

Our total opex forecast for the bus and ferry portfolio is **$3.567b** as shown in *Figure 72*.

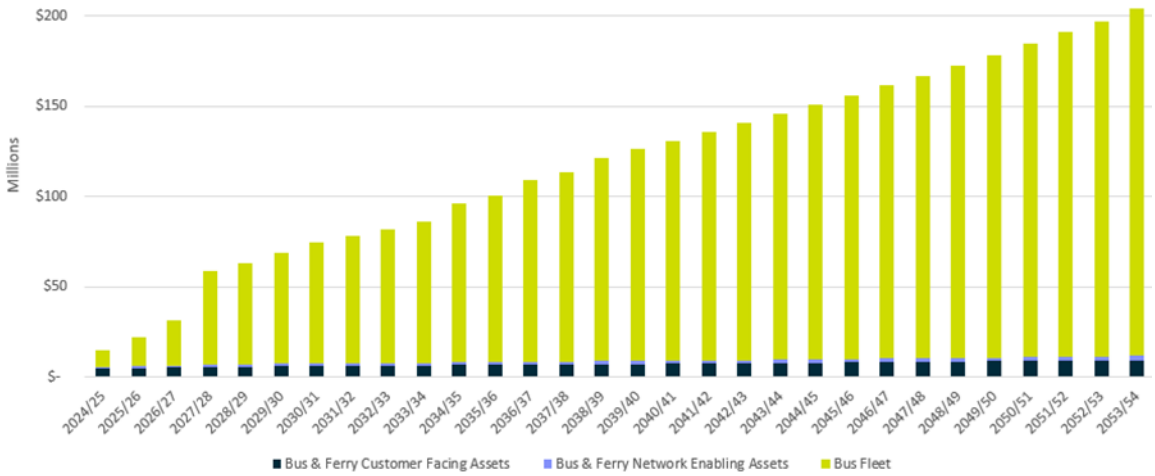


Figure 72: Bus and ferry portfolio opex

The breakdown of this is:

- Bus and Ferry Customer Facing Assets, $220m
- Bus and Ferry Network Enabling Assets, $51m
- Bus Fleet, Depot, EV charging, $3. 296b

The core opex for our bus and ferry portfolio are:

- Bus Fleet, Depot, and EV charging: $3.296b is forecast for bus fleet growth over the next 30 years. This includes $325m to cover the additional depot capacity required to support the bus fleet growth. The EV charging costs are built into the bus costs. The costs for buses, charging infrastructure and depot assumes that the operators purchase the assets and GWRC makes opex payments to the operators as an uplift in the base service fee. This is to meet the forecast patronage growth over the period and move to a zero-emission fleet. Included in this figure is also the lease and operating costs for the Southern Depot.
- Cleaning and Maintenance: $122m is forecast to carry out the cleaning and Maintenance of customer facing and network enabling assets. This work ensures that we can provide clean safe facilities with a good level of information to passengers while they wait for their service, improving the customer experience which in turn can help promote a move from private vehicle to public transport. It also includes maintenance and cleaning of facilities which support the operation of the network which in turn helps the reliability (punctuality) of the services, again driving a move from private vehicle to public transport.
- This forecast covers both planned and unplanned activities.

- Leases: $26m is the current forecast for leases on facilities on the existing bus network, this covers layovers (not Depots), and infrastructure that we own that is located on third party land.
- (BRT) stops on the network. This improved infrastructure will help contribute to a move from private vehicle to public transport and accessibility targets.
- Investigations and feasibility studies, data, audits, and Standards: $18m is forecast to carry out the investigation and feasibility studies and design work to support the current and future network and ensure that the data that is stored on the assets is up to date and accurate. This is supported through audit programmes, and ensuring guidelines are kept updated to reflect the requirements and standards of the time. By having accurate data and technical standards assets can be correctly assessed, upgraded, installed, and renewed making the network more accessible and attractive to current and future users.

Capex

Capex forecast covers the renewal of the existing asset base and the creation of new assets on the network and fleet, charging infrastructure and depots.

The current capex forecast for the next 30 years is **$292m** as shown in *Figure 73*. This is divided as follows:

- Bus and Ferry Customer Facing Assets, $164m
- Bus and Ferry Network Enabling Assets, $25.83m
- Bus Fleet, Depot, EV charging, $102.6m.

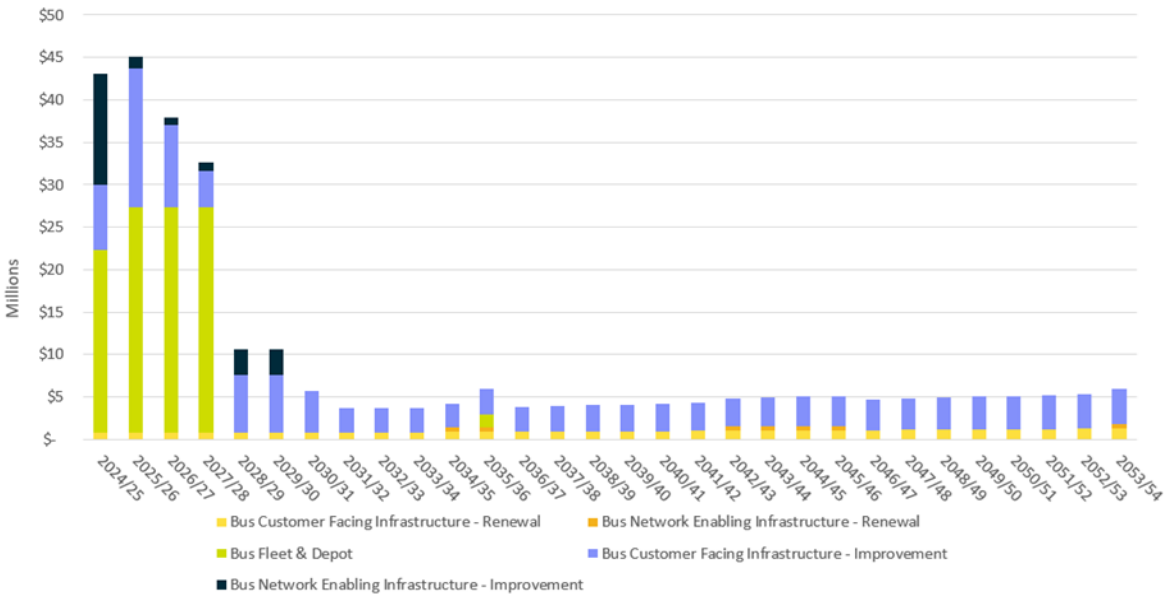


Figure 73: Bus and ferry capex

The core investments for our bus and ferry portfolio are:

- ***Bus Shelter New & Replacement Programme:*** $80 million of investment to renew and install new bus shelter facilities. Having a place to wait for a bus service that is safe and protects the customer from environmental factors is key to customer satisfaction. This continuous programme of investment provides facilities that meet CPTED design and best practice for accessibility and encourages mode shift.

- ***Southern Bus Depot:*** $101 million is forecast for the construction of a new Bus Depot in Lyall Bay. The development of the 2-hectare site is to be done in phases to utilise parcels of land as requirement grows, the initial development will allow stabling and charging with later stages looking at different requirements including maintenance, cleaning, and operational facilities. The development is planned to be completed FY 27/28.

- ***CBD Shelters:*** $16 million is forecast for the design, manufacture, and installation of new shelters on the golden mile, Hutt Road/Thornden quay and the second spine. A total of 8 locations from Lambton Quay to Cortney place will have new bus shelters which have been designed to fit into the design of the golden mile and accommodate the large volume of passengers we get at these key locations; accessibility, passenger information, lighting and CCTV are incorporated into the designs to provide the levels of service required. The shelters on Hutt Rd/Thorndon Quay and the second spine will be of a standard Metlink design sized appropriately for the forecast patronage.

- **Interchange improvements:** $21 million of new investment has been forecast for improvements to the Johnsonville and Porirua bus and train interchanges. These changes will improve the connections of these transport modes while creating user friendly, safe, and accessible facilities. These in turn will help drive a move from private vehicle to public transport, by increasing customer satisfaction

- **BRT Facilities upgrade:** $34m is forecast for improvements to shelters and information at the BRT facilities across the region. BRT is an integral part of the public transport network; it needs to be designed to cope with the planned and unplanned disruption on the rail network.

- **Layover and Interchange**: $22m is forecast for specific off network layover and purchase of assets and renewals at the Lambton interchange. Further work is required in this space to fully identify the requirement on the network to support growth over the next 30 years.

Bus and Ferry Customer Facing Asset Class Plan

This asset class plan describes our lifecycle management approach for our bus and ferry customer facing assets. The assets and categorisations outlined in this asset class plan apply to all the assets on our public transport network, irrespective whether we own them or whether they are owned by the local Territorial Authority (TA).

Strategic objectives

Metlink's strategic focus areas directly determine how we plan, develop, maintain, and operate our customer facing assets. Our bus and ferry customer facing assets:

- determine the environment our customers' experience while waiting to board our bus and ferry services; and
- provide information to our customers on the services and surrounding communities.

Therefore, our customer facing assets:

Support a move from private vehicle to public transport by enhancing customer experience and information provision at bus stops to make public transportation more appealing, encouraging travellers to shift from private cars to buses.

Support **Access and Accessibility** by providing accessible information and comfortable waiting areas. This ensures everyone, including people with disabilities, can easily access and use public transportation services.

Support **Decarbonisation** by making public transport more attractive and accessible, encouraging more people may choose it over cars, reducing overall emissions.

To achieve these outcomes, we have established the following asset strategies that guide our planning. We aim to ensure:

- well placed, fit for purpose amenities and information to encourage public transportation use.
- shelters accommodate various passenger needs and protect customers from adverse weather conditions.

- clear signage for passengers with mobility challenges and ensuring easy bus alignment with the curb. Where possible, include accessible curbs, ramps, tactile indicators, and auditory announcements.
- facilities to handle growth, optimize movement during peak times, and minimise waiting.
- lighting, signage, and hazard-free paths to ensure a secure environment, adhering to CPTED design principles. For bus hubs, include CCTV.
- sustainable materials and energy-efficient lighting to support sustainability goals.
- clean and well-kept bus stop facilities.

The investments outlined in this AMP are focussed on meeting these objectives.

Asset characteristics - current state

Our bus stops are a place where our passengers embark and disembark. The simplicity of this process belies the complexity of the bus stop design details required to achieve an accessible, safe, and affordable bus stop. The key component to bus stop design is that the bus can reliably and consistently get close and parallel to the kerb and stops where passengers expect it to stop relative to the flag, shelter, and road markings and does not obstruct the road.

Our bus and ferry customer facing assets consist of the asset types as shown in Table 27.

Table 27: Bus and ferry customer facing assets

Item	Description
Bus shelters	Provides seating, shelter, and hard standing area for passengers to wait for bus services.
Metlink and RP5 Signs	Displays a unique stop number and indicate bus stops with traffic resolution parking restrictions. The current design combines both Metlink and RP5 information into one sign.
Poles	Allowing Metlink, RP5 signs, and timetable cases to be displayed.
Timetable display cases	Provides dry space for paper timetable to be displayed. Various sizes used.
Totems	Provides directional, route information and timetable information. Totems have more space for timetables than timetable display cases.

Item	Description
Wayfinding signs	Provide passengers with simple directions to public transport and other places of significance. Typically located at major stops.
RTI displays	Electronic displays providing customers with real-time bus departure time information.
Seats	Separate seating that is not incorporated into a shelter or owned by the local authority (installed by exception).
Hub assets	Large shelter, incorporating network information, route information displayed, lighting, CCTV, and high level of accessibility to buses

Below is a description of the assets that form this asset class.

Bus shelters

There are a variety of bus shelter designs on our public transport network. Our older bus shelters are constructed with different materials and layouts as historically each TA installed shelters to their own requirements and with local colours.

The variety of bus shelter designs are DesignBrand, CAM, Kiwi, HM, Metro, Concrete Bunker, Concrete and Wood and Wooden.

Shelter Type	Appearance
DesignBrand	

Shelter Type	Appearance
CAM	
Kiwi	 
HM	
Metro	

Shelter Type	Appearance
Concrete Bunker	 
Concrete and Wood	 
Wooden	

We plan our new bus shelters to a standard modular design, which considers durability and quality elements, but also accessibility requirements such as wheelchair access and clearance around structures. This design provides a 'clean' overall appearance while minimising the scope for injury and vandalism. The design of these shelters incorporates Crime Prevention through Environmental Design (CPTED) standards. Standard installations are 3.6m x 1.2m, with larger and smaller shelters an option depending on site specific requirements and constraints.

New shelter installations typically have an artwork laminate on them to reduce vandalism.

Lighting is provided at some shelters via solar lighting on a limited basis. In some cases, we work with the TA to improve or adjust street lighting. New installations consider existing lighting when locating the shelter.

Signage

Our existing bus stop signs vary, as designs have developed over time. The current design of our signs combines both the Metlink sign information and the RP5 sign (see below) to maintain cost efficiency and avoid excess signage. Our new signs include the legal RP5 sign, which means traffic resolutions are required at all bus stops with this sign. Traffic resolutions are the responsibility of the TA and should be in place at all bus stops. However, there are several bus stops, particularly low category stops in the regions, which do not have a traffic resolution, resulting in our customers having to board/alight the bus in the carriageway as the bus is unable to pull up to the kerb. Much of our signage is installed on utility company poles.

Table 28 shows and describes the various bus stop signs on our public transport network.

Table 28: Various bus stop signage design

	Combined Metlink/RP5 (Type D)	Metlink and RP5	Metlink Bus Stop Letter	Rail replacement	Metlink Logo	Route #
Example						
Description	Current standard for new sign installations	Alternative for new sign installations Typically used where the bus stop has time restrictions, such as school stops	Current standard at major stops and hubs where there is more than one stop grouped in one location Requires an RP5 to be installed separately	Current standard for new sign installations at stops where buses replace trains. A number of stops have older style signage.	Older signage no longer installed but meets requirements No new installations Will be phased out over time	Older signage that may have out of date route number information. No new installations Will be phased out over time

Totems and wayfinding signage

Timetable information on totems is expensive to replace when bus timetables are amended. This expense is considered when we plan or review totems.

Bus hubs

Our bus hubs are a collection of bus stops, located close together, that connect buses from outer suburbs with main routes. We own the bus hub assets. They are sheltered, well-lit spaces, making transferring between buses easy. Figure 74is a picture of our Brooklyn bus hub.

Figure 74: Brooklyn bus hub

RTI displays

Our RTI displays are the electronic displays providing customers with real-time bus departure time information. RTI displays in the region vary from having three lines of information (the most common) to six, eight, or 18 lines. Additionally, a few key locations have LCD televisions displaying real time information. RTI displays have been in place since 2011 with coverage growing since then. They form a part of bus stop infrastructure at major stops. Customers can also access RTI via their smartphones through either the Metlink website or apps.

Bus stop assets owned by others

In addition to our bus stop assets, several assets that are required to operate a successful public transport bus service are not owned by us. These are:

1. **Road corridor.** The road corridor is where bus stop infrastructure is located, including the footpath, berms, and road pavement. Allocating space within the road corridor for bus infrastructure is the responsibility of the road controlling authority. Depending on the road, this could be the TA or Waka Kotahi NZTA. They are also responsible for the painted bus stop markings. We recommend a 15m bus box and 9m entry and exit tapers.

2. **Privately owned verandas.** These provide shelter from the weather at 112 of our bus stops, meaning the bus stop does not require a Metlink bus shelter.

3. **Seating.** The TAs within our region own 991 seats for our passengers to await our bus services.

4. **Utility poles.** Our signage is installed on 932 utility provider owned poles to reduce clutter.

5. **Adshel bus shelters.** There are 176 bus shelters on our bus network that are owned and maintained by Adshel NZ Ltd, under contract with TAss to display advertising.

6. **Lambton Interchange.** Wellington City Council currently owns the Lambton Interchange, the financial forecasts included within this Asset Management plan include the purchase, lease, maintenance, and improvement cost for GWRC to take ownership of the Assets. It is responsible for the maintenance and cleaning of the interchange, which is funded by Metlink. Please note the asset management activities for the layover part of Lambton Interchange are discussed in the Bus and Ferry Network Enabling Asset Class Plan.

7. **TA shelters.** WCC and Wairarapa TAs have retained ownership of the shelters they have installed. Metlink cleans and maintains all shelters on the network and replaces end of life WCC shelters, at which time they become Metlink assets.

8. **Rubbish bins.** These are owned, managed, and maintained by the relevant TA.

Asset Importance

We have over 3,000 bus stops on our network. To manage them, we define each bus stop as being in one of five categories. The five bus stop categories are based on importance to our public transport network and consider the function and location of the bus stop. The function of the bus stop accounts for the importance of the bus stop within our network, including the number of trips servicing a bus stop and the connections that can be made. The location of the bus stop accounts for the proximity of the bus stop to places of employment, major destinations, local community facilities, and shops.

We have defined our bus stops categories as follows:

Category 1 – Premium stops

Category 1 bus stops are served by high frequency services and multiple routes. They must be used by more than 250 services per day and be within proximity to many employment sources, businesses, shops and community facilities. Category 1 bus stops must have a large, sheltered area with seating, large RTI sign, network map, lighting, totem sign for timetable display, painted bus box and tapers, bus stop traffic

resolution, and a hard standing surface. We plan to provide CCTV coverage at all category 1 stops. We currently have 29 Category 1 bus stops. The indicative cost to install a Category 1 bus stop is $106,000.

Figure 75 below is a Category 1 bus stop.

Figure 75: Category 1 bus stop

Category 2- Major stops

Category 2 bus stops are served by high frequency services and multiple routes. They must be used by more than 150 services per day and be within proximity to a large number of employment sources, businesses, shops, and community facilities. Category 2 bus stops must have a sheltered area with seating, RTI sign, timetable and case, painted bus box and tapers, bus stop traffic resolution, hard standing surface, and Metlink bus stop sign. We plan for Category 2 bus stops to have lighting, totem sign for timetable display, large RTI sign, and a network map. We currently have 68 Category 2 bus stops. The indicative cost to install a Category 2 bus stop is $69,000.

Figure 76 is an example of a Category 2 bus stop.

Figure 76: Category 2 bus stop

Category 3 – Standard Stops

These bus stops are served by high frequency bus routes and are often located in suburban areas, near local centres. Category 3 bus stops have a sheltered area with seating, timetable and case, painted bus box and tapers, bus stop traffic resolution, hard standing surface, and a Metlink bus stop sign. If appropriate for the location, lighting, and a RTI sign may be provided. The indicative cost to install a Category 3 bus stop is $25,000. We currently have 558 Category 3 bus stops.

Figure 77 is an example of a Category 3 bus stop.

Figure 77: Category 3 bus stop

Category 4 – Local Stops

Category 4 bus stops are served by standard bus routes and are often located in suburban areas. They tend to be low patronage suburban inbound stops. Category 4 bus stops have a timetable and case, painted bus box and tapers, bus stop traffic resolution, hard standing surface, and a Metlink bus stop sign. If appropriate for the location, Category 4 bus stops will have lighting and seating. We currently have 1,087 Category 4 bus stops. The indicative cost to install a Category 4 bus stop is $2,000.00.

Figure 78 is an example of a Category 4 bus stop.

Figure 78: Category 4 bus stop

Category 5 – Minor Stops

Category 5 bus stops are used predominantly as set down only bus stops and can be located anywhere in the region. They tend to be outbound stops where people get off the bus and where they do not tend to get on the bus. Category 5 bus stops must have a bus stop traffic resolution, hard standing surface, and a Metlink bus stop sign. If appropriate for the location, Category 5 bus stops will have painted bus box and tapers, lighting, and site-specific timetable and case. We currently have 1243 Category 5 bus stops. The indicative cost to install a Category 5 bus stop is $2,000.00.

Figure 79 is an example of a Category 5 bus stop.

Figure 79: Category 5 bus stop

A further bus stop type is for train replacement services, known as buses replacing trains (BRT). Some public stops are used as BRT stops, but some are exclusively used for BRT; they are not included within the current categorisation due to the limited use. The service levels for these stops is being reviewed in line with the rail network patronage and significant investment is being identified in the LTP for improvement of these locations.

Summary

Table 29 summarises the assets required at each bus stop by category.

Table 29: Assets at each bus stop by category

Category	Assets Required
1	Category 2 assets plus: • Large shelter/covered area with seating • Large RTI sign • Network map • Lighting • Timetable incorporated into a totem
2	Category 3 assets plus: • RTI sign
3	Category 4 assets plus: • Shelter/covered area with seating

Category	Assets Required
4	Category 5 assets plus: • Timetable and case • Painted bus box and tapers
5	• Bus stop traffic resolution • Hard standing surface • Metlink bus stop sign
BRT	• Requirements being assessed

The number of bus stops by category and TA is shown in Table 30.

Table 30: Bus stop population by category by region

	Number of Bus Stops by Category						
TLA	**1**	**2**	**3**	**4**	**5**	**BRT**	**Total**
Wellington	28	43	282	690	314	14	**1371**
Lower Hutt	1	29	219	214	196	11	**670**
Upper Hutt	0	1	43	48	138	4	**234**
Porirua	1	4	60	154	129	4	**352**
Kapiti	0	1	15	170	119	1	**306**
Wairarapa	0	0	0	4	160	5	**169**
Total	**30**	**78**	**619**	**1280**	**1056**	**39**	**3102**

Population and life expectancy

The quantity and life expectancy of our bus stops assets are shown in Table 31

Table 31: Shelter population and life expectancy

Asset	Quantity	Life expectancy (years)
Seating	100	20
Shelter – Design Brand	404	25
Shelter – CAM	106	20
Shelter – Kiwi	50	20
Shelter – Metro	48	20
Shelter – Concrete Bunker	60	45
Shelter – Wooden	66	45
Shelter – Concrete and Wood	23	45
Shelter – Heritage	6	45
Shelter – HM	49	20
Shelter – Concrete Block	9	45
Shelter - Metlink	32	20
Shelter – Metco	12	25
Shelter – Other	24	20
Signage	3906	7
Wayfinding Signs	39	3
Timetable and case	2770	10
Totem	58	7
RTI Display	212	10

Asset condition

Our bus and ferry stop assets have their condition assessed by our maintenance contractor during their regular cleaning and maintenance activities, which is outlined in our contract.

Shelters are assessed for replacement on both condition and functionality. Figure 79 shows bus shelter condition.

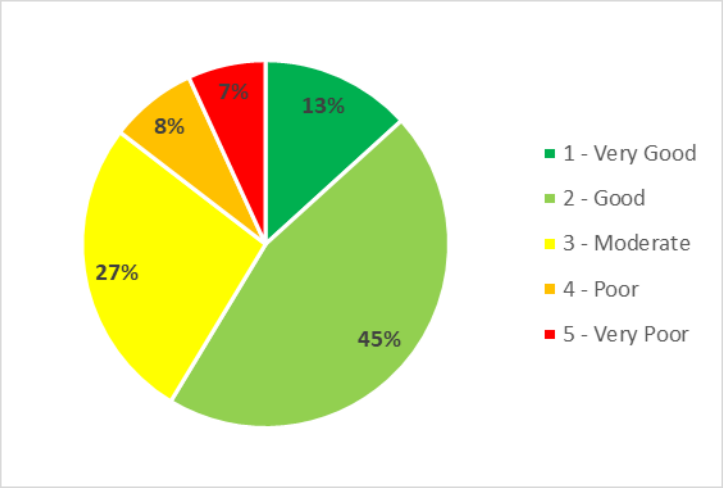


Figure 32: Bus shelter condition, April 2024

A total of 15% of the shelters are in a condition that ranges from poor to very poor. It appears that the older shelters constructed from concrete and wood are particularly in need of replacement. To address this, there is an ongoing Shelter Renewal Programme which aims to replace older shelters.

We evaluate our bus shelters to ensure they are effective and meet passenger needs, focusing on three main areas:

- **Weather protection:** We check if the shelters provide enough protection from bad weather, keeping passengers safe from rain, wind, and other elements.
- **Visibility:** It's important that passengers inside the shelter can see their bus coming and that drivers can see passengers waiting. Our evaluations ensure that both can happen smoothly.

Accessibility and safety: We make sure our shelters are accessible to everyone, including those with disabilities or mobility issues. We also apply CPTED principles to prevent crime and make passengers feel safe.

The functionality assessment is broken down by shelter type. The older concrete and wooden shelters overall have low functionality, while the metal-built shelters have glass and/or better accessibility standards but some still have issues which impact our customers. The newer design of shelters meets the functionality requirements.

Figure 80 shows our bus shelters' fit for purpose as of April 2024.

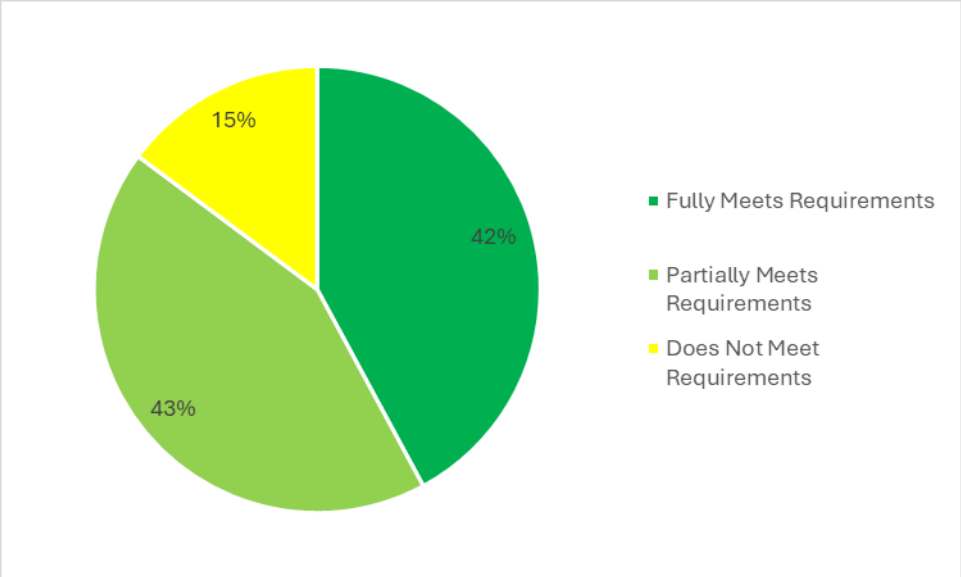


Figure 80: Bus shelters' fit for purpose as of April 2024

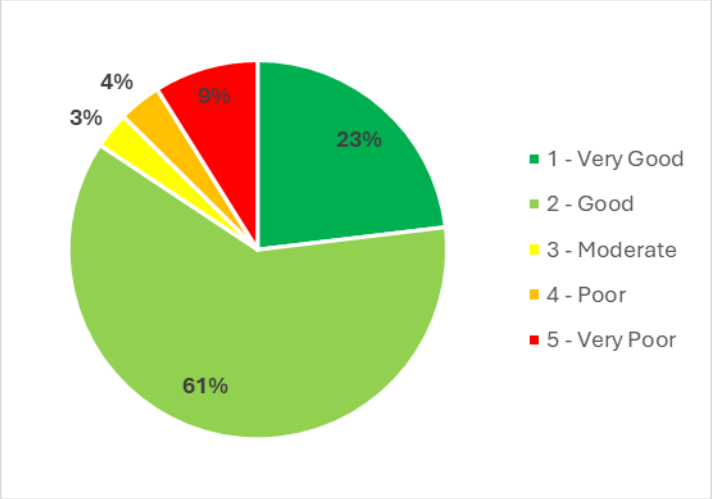
We replace signage and timetable cases if the asset is damaged or unusable. On average, we replace approximately 5-10 signs monthly due to damage, based on reporting and actual damage cases. The condition of signage assets is recorded using the condition rating scale outlined in Table 33.

Table 33: Condition rating scale

Rating	Condition	Description
1	**Very Good:** Only routine maintenance required	Sound physical condition well maintained. Asset likely to perform adequately with routine maintenance for 10 years or more. No work required.
2	**Good:** Minor maintenance required	Generally sound physical condition, showing minor wear or deterioration, well maintained. Deterioration has no significant impact on asset performance. Only minor work required (if any).
3	**Moderate:** Moderate maintenance required	Acceptable physical condition, showing some wear or deterioration, well maintained. Some parts of the asset need replacement or repair, asset still functions safely at adequate level of service. Moderate work required.
4	**Poor:** Significant maintenance required	Poor physical condition, significant wear or deterioration, pars of the asset need replacement or repair. No immediate risk to health or safety, barely adequate level of service. Substantial work required short term.
5	**Very Poor:** Asset requires upgrading, replacement or written off	Failed or failure imminent. Immediate need to replace most or entire asset. Health and safety hazards exist or asset cannot be serviced without risk to personnel. Major work or replacement required.

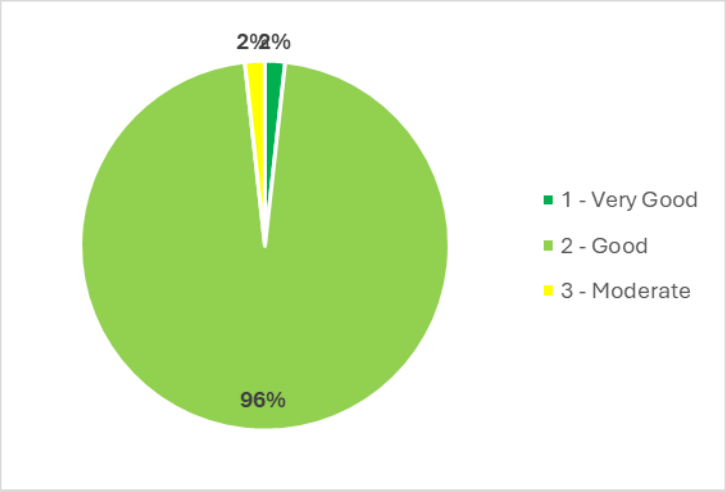
Bus stop asset condition ratings, April 2024

Signage



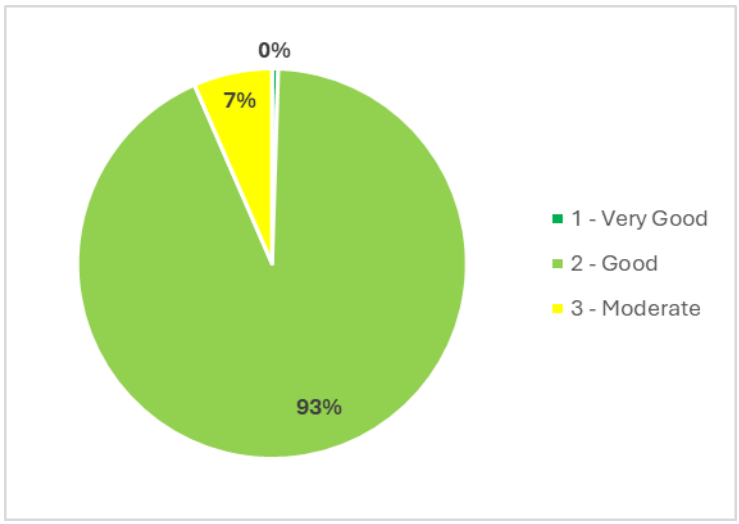
The majority of signages, 61%, are in 'Moderate' condition. 'Very Good' and 'Good' conditions account for a combined 32% (23% and 9%, respectively). However, there's a small percentage that requires attention: 4% are in 'Poor' condition and 3% are considered to be in 'Very Poor' condition. These are addressed with our Signage Renewal Programme.

Totem



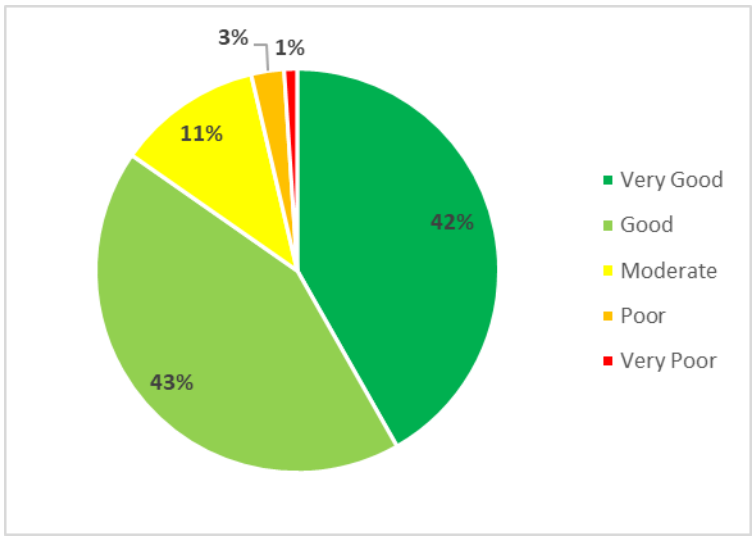
There is a positive outlook on the condition of bus totems, with a vast majority, 96%, being in 'Moderate' condition. Additionally, 2% are in 'Good' condition and 2% in 'Very Good' condition. This data suggests that bus totems are durable and are generally maintained well.

RTI Displays



The RTI displays are predominantly in 'Moderate' condition, accounting for 93% of the total. The remaining 7% are in 'Good' condition, and none are classified as 'Very Good'. While the current state is generally satisfactory, all displays are slated for an upgrade to the new RTI 2.0 system, which will involve replacing the existing units.

Timetable Cases



Timetable cases at bus stops were predominantly in 'Moderate' to 'Good' condition, with 43% marked as 'Moderate' and 42% as 'Good'. Only a small fraction were in 'Poor' (11%) and 'Very Poor' (3%) conditions, with a negligible 1% in 'Very Good' condition. These items are part of routine bus stop maintenance.

Asset risk

The main risks facing our bus and ferry stop assets are weather, geological hazards, environmental conditions, human-caused accidents, vandalism, capacity, safety concerns through design and technological.

To mitigate these risks for our new bus and ferry stop installations, we carry out site specific assessments so that our planning takes into consideration location, orientation, design, and construction materials (including using specialist coatings to prevent permanent graffiti damage)

Our RTI displays rely on the continuous supply of electricity and telecommunications. If they are disrupted, they may also be interrupted. Our assets need to be continually assessed against the requirements and standards as a change in either could deem them to no longer be fit for purpose.

Asset performance

If one of our bus stop assets fail, our bus service is likely to still operate but the level of service would diminish. Our bus stop assets have generally performed well from a condition perspective but not always from a functionality, accessibility and CPTED viewpoint.

There are currently 230 shelters that either partially or do not meet current CPTED and functionality requirements. We are addressing this level of service gap through our shelter renewal programme.

Not all our bus stops meet the current draft Waka Kotahi NZTA Design Guidance for Public Transport, these guidelines ensure that a bus can enter and exit a stop uninhibited and provide sufficient space for busses to pull parallel to a curb improving accessibility. This alongside existing structures and road geometry can create problems for busses using some stops. Our bus stop accessibility improvement programme of work aims to address these deficiencies. Our ability to implement these improvements requires the support of the TA and the community. Figure 81 provides an example of a building canopy overhanging the carriageway.

Figure 81: Example of a building canopy over the carriageway

Our planning considers the lifecycle of all components of our bus stop assets. This includes ensuring the laminates on our assets are replaced in accordance with the manufacturer's guidelines, particularly age-related guidelines. We have found that if our laminates are replaced after the recommended replacement age, it is more costly to remove these laminates as the adhesive hardens.

Asset information

We have identified deficiencies in the data that we hold for customer facing assets and are working towards improving this through the next triennium.

The current condition information is primarily based on the function and appearance of the assets. This is updated yearly for each asset along with maintenance costs, location, and photos. We have recently developed bus shelter guidelines and standards to ensure condition assessments of our shelters are standardised across our public transport network. Implementation of these guidelines and standards will provide a more accurate view of the overall condition assessment of the assets and allow better lifecycle planning.

We are also focused on capturing the wider assets information so we can ensure plans accurately communicate the requirements to meet public transport guidelines and accessibility standards. The data that we require is on assets owned by the local roading authority, this includes road markings, curb dimensions and any other structure that may impede the ability for busses of varied sizes to access the stop in a safe and accessible manor. Although the information that we require is of other TA's assets the level of data available has been limited.

Lifecycle Maintenance and Activities

Our asset management lifecycle approach for our bus and ferry customer facing assets reflects our lifecycle activities of planning, deliver, operate, and maintain. Each of these is discussed below.

Planning

Our planning activities include:

- making provision for increasing service frequency which may result in planning for new assets, refurbishing existing assets, or relocating assets to where they are better utilised.
- regularly reviewing patronage demand, upcoming urban developments and ensuring bus stops are allocated to the correct bus stop category so that sufficient provision of shelter from the wind and the rain is available for peak demand.
- ensuring our bus stops and associated assets are regularly cleaned and free of graffiti and vandalism to ensure our bus and ferry customer facing assets provides a safe and accommodating environment.
- renewing and updating the suite of information provided at our bus stops including timetable, RTI, service disruption information, and wayfinding information.
- renewing assets based on their health which is based on performance against desired service levels, condition ratings and degradation.
- upgrading our bus and ferry customer facing assets during renewal and improvement activities to improve accessibility.
- working with communities and partnering with mana whenua when planning for new assets.

The planning of our work programme is prioritised based on safety, condition, bus stop category, patronage demand, accessibility, and future urban development.

Deliver

Within the Deliver lifecycle stage, we procure, construct, and commission the programmes of work that have been identified within the Planning stage. Where applicable, works are integrated into a wider programme schedule, and this incorporates other works at the same locations for resource and cost efficiency.

Once we have identified our required work programme, we work with the relevant TA's to identify any specific requirements, this may include public engagement, building or resource consents, formal consultation and formal submission of traffic resolutions. This can be a lengthy process which has the potential to delay, change or even halt

projects. Once this process is finalised, we instruct our service providers to undertake the work, except for road marking, which is undertaken by the relevant TA.

The activities within the programme of work are typically set up and managed as projects using our project management framework.

Maintain

We ensure our bus stop sites and assets are in a clean, sanitary, tidy and free from items such as gum, rubbish, posters, stickers, graffiti, and any other undesirable material. All individual components within a site or a bus stop asset will be cleaned, including the signs timetable holders, posts, bus shelters and bus stop footpath areas.

The standards and methods of cleaning are shown in Table 34 below.

Table 34: Bus and ferry stop cleaning requirements

Item	Requirements	Standard
Glass/plastic surfaces	All Unauthorised Materials will be removed using approved methods. All accessible surfaces will be fully cleaned. All glass surfaces and large plastic surfaces will be washed using water and detergent, hosed down and squeegeed.	Clear of Unauthorised Materials and streak free.
Seating	All Unauthorised Materials will be removed using approved methods. Seating will be hosed down using hoses that are of pressure to fully clean the surface without damaging the surface and then dried.	Clear of Unauthorised Materials, no visible stains or dirt and dry.
Shelter roofing	All Unauthorised Materials will be removed using approved methods. Underside hosed down using hoses that are of pressure to fully clean the surface without damaging the surface. Topside to be cleaned of vegetation, lichen and other materials, all spouting to be cleared.	Clear of Unauthorised Materials, no visible stains or dirt and dry.

Item	Requirements	Standard
RTI Displays	All Unauthorised Materials will be removed using approved methods. Washed down using a low-pressure water device, delivery of the water is to be through a soft bristled cleaning brush to remove any dust and dirt together with any residue from the removal of unauthorised materials. Each display screen or totem must then be wiped with a dry cloth to remove any residue or streaking.	Clear of Unauthorised Materials, no visible stains or dirt, dry and streak free.
Timetable holders	All Unauthorised Materials will be removed using approved methods. Each holder cleaned with a citrus based cleaner or other Materials approved by us.	Clear of Unauthorised Materials, no visible stains or dirt, dry and streak free. Paper timetables must remain dry.
Footpath	All footpath areas will be swept, and debris removed. The pavements (include the floor areas inside the shelter) will then be hosed to remove stains (from dropped food, drinks etc.), ingrained dirt and any other Unauthorised Materials.	Surface maintained in as close to 'as new' condition as possible.

We undertake routine maintenance which consists of planned and scheduled maintenance. We also undertake unplanned work which consists of reactive and emergency maintenance work in response to issues raised by us, our service providers, the relevant TA, or the public. Routine maintenance consists of:

- reattaching signs where band / brackets have broken or come undone
- replacing damaged RP5 and Metlink signs that cannot be reused or reattached
- replacing missing sign pole wedges
- replacing damaged poles and reattaching signs
- reattaching timetable holders
- replacing timetable inserts
- realigning poles that have rotated in the wind or due to vandalism
- removal of damaged Metlink signs that cannot be reattached

- straightening of bent poles
- repairing seats, spouting, and timber walls.

The response times for reactive maintenance and emergency works is shown in Table 35.

Table 35: Reactive and emergency works specified timeframes for bus and ferry stop assets

Request for Service	Response
Issue reaches the threshold for Emergency Works and is outside the Wairarapa region.	Within 2 hours
Issue reaches the threshold for Emergency Works and is within the Wairarapa Region.	Within 4 hours
Smashed or broken glass that does not meet the threshold for Emergency Works	Make safe within 24 hours unless notified otherwise.
Damaged and unsafe assets that do not meet the threshold for Emergency Works	Make safe within 24 hours and replace within 2 weeks, unless otherwise notified by us.
Damaged and safe assets	Inspect at weekly inspection and rectify within 2 weeks, unless otherwise notified by us.
Offensive graffiti	Remove and clean within 24 hours.
One off cleaning	As agreed with us.

Forecast expenditure

The work programme and corresponding expenditure in this ACP is based on identified needs and is derived from the expenditure in GWRC's 20234-2054 Long Term Plan (LTP) and Regional Public Transport Plan (RPTP). At the time of writing, we have not received clarity on funding from the National Land Transport Fund (NLTF). If the funding from the NLTF changes from that allowed for in the LTP, the investment plan presented within this ACP will be reviewed and re-prioritised.

The key investment drivers for our bus and ferry customer-facing assets are to improve customer experience, accessibility, and encourage a shift from private vehicles to our

public transport network. Our total forecast for the 30-year period of this plan is $384 million, comprising both opex and capex. Although the 2024 Long-Term Plan (LTP) is approved, the budget remains provisional as we await approval from Waka Kotaki NZTA, our partner co-funding 51% of the budget.

Opex

The opex forecast for customer-facing assets is $220m for the 30-year period. This covers the operation and investigation of all public-facing bus infrastructure assets, ongoing leases, and minor civil and accessibility works. Key investments include:

- Bus Stop Maintenance and Cleaning: $76m
- Civil Works for Infrastructure Improvement and Renewal Projects: $68m
- Bus Infrastructure Studies and Investigation, 18m
- Signage Maintenance and Replacement: $16m
- CCTV Maintenance and Operation: $16m
- Bus Stop Improvement and Accessibility Improvements, including BRT: $17m
- Leases: $15 m

The opex forecast ensures the proper maintenance and improvement of bus infrastructure assets, enhancing overall customer experience and accessibility. Regular maintenance, cleaning, and essential civil works are prioritized to keep assets functional and up to standards. Investments in signage, CCTV, and accessibility improvements are crucial for safety, navigation, and inclusivity. Leases ensure continued use of necessary facilities and spaces.

Our bus infrastructure improvement and renewal projects usually involve opex costs due to GWRC's limitation to owning only above-ground assets. Improvements in the road corridor—such as kerbs, paving, tactile surfaces, and accessibility upgrades on third-party assets—are operational expenses; they cannot be capitalised.

Capex

The total capex renewal and capex improvement forecast is $164 m. The core capex investments for our bus and ferry customer facing portfolio are:

- **Bus Stop Facilities New Programme:** $50 million for network-wide enhancements to bus stops, including the installation of new shelters and updated signage to ensure consistency and adherence to service standards. This program aims to enhance user experience and meet increased demands through modernized infrastructure and supporting network growth through new bus stop facilities.
- **BRT Facilities upgrade:** $34m is forecast for improvements to shelters and information at the BRT facilities across the region. BRT is an integral part of the

public transport network, it needs to be designed to cope with the planned and unplanned disruption on the rail network.

- **Bus Stop Facilities Renewal Programme**: $30 million for the Shelter Renewal Programme, which prioritizes the replacement of older concrete and wooden shelters based on age, functionality, condition, and heritage value. This includes the upcoming CCTV renewals to maintain safety and security standards across the network.
- **Porirua Interchange and Layover Improvement** A $7 million investment to overhaul the Porirua Interchange, enhancing its capacity and facilities to handle increased passenger flow in the Wellington region, addressing outdated infrastructure. Enhancements will include new shelters, seating, and lighting, as well as increased layover capacity and new driver facilities to elevate the passenger experience and accommodate growing user numbers effectively.
- **Johnsonville Transport Hub Development**: This project involves an investment of $13.8 million to expand the Johnsonville Hub's capacity and facilities, ensuring it can meet future demands. With anticipated increases in passenger numbers, this hub will undergo extensive development to expand layover capacity and incorporate modern transport facilities. The project includes new driver facilities and is critical in managing the expected rise in demand, ensuring the hub remains a pivotal link in Wellington's transportation network.
- **Golden Mile Bus Stops Improvement**: An $11 million project focused on upgrading bus stops along this key route to improve safety, accessibility, and comfort for passengers. This project aims to address current deficiencies in infrastructure and prepare for future increases in bus traffic.

Figure 82 shows our bus and ferry customer facing asset opex, asset maintenance, capex renewal, and capex improvement expenditure.

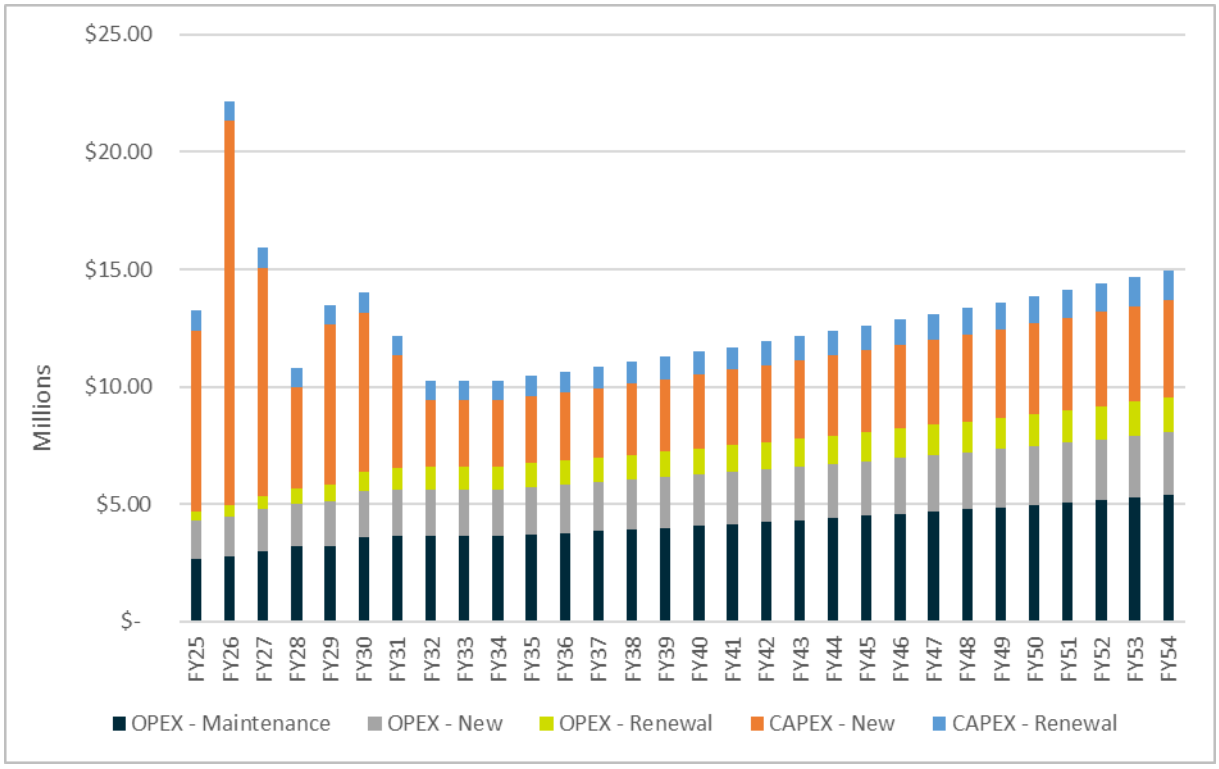


Figure 82: Bus and ferry customer facing assets expenditure.

Bus and Ferry Network Enabling Asset Class Plan

This asset class plan describes our lifecycle management approach for our bus and ferry network enabling assets. Network enabling assets consist of bus layovers and driver facilities. Bus layovers are designated areas of the carriageway or dedicated areas of land where buses park between trips, and drivers take their legally required meal/tea breaks. We separate driver facilities into two categories, driver toilets and driver meal break rooms. Some layover areas only provide standalone driver toilets, and some provide driver toilets and meal break rooms.

Our network has grown over recent years with an increased frequency of services. As we acquire more fleet to support a growing network and increased patronage demand, there is an increasing demand for additional layover space and driver facilities. It is challenging to keep up with the demand for layovers and driver facilities. With sparsely located layovers in the current network and the lack of suitable land available for lease or purchase, the network's efficiency and potential for growth is limited. Therefore, it is critical we assess and plan to deliver more network enabling assets. We are investigating and assessing suitability of several locations across the region for additional layover space.

Strategic objectives

Metlink's strategic focus areas directly determine how we plan, develop, maintain, and operate our network enabling assets. Our bus and ferry network enabling assets:

- provide essential facilities to support our bus drivers, enhancing their well-being and ensuring the reliable delivery of bus services.
- create an efficient environment for our drivers and bus fleet while streamlining network infrastructure and functionality to enhance the overall quality and reliability of bus services.

Therefore, our network enabling assets:

	Support **Mode shift** by creating a comfortable and efficient environment for bus drivers, which, in turn, enhances their job satisfaction and encourages their continued commitment to providing reliable and high-quality public transportation services.
	Support **Access and Accessibility** by ensuring that these assets are strategically located and designed to be easily accessible for drivers, supporting their needs for rest, facilities, and layovers while minimizing disruptions to the overall transportation network.
	Support **Decarbonisation** by promoting mode shift, supporting our EV bus fleet with charging stations, improving operational efficiency, and maintaining network reliability.

To achieve these outcomes, we have established the following asset strategies that guide our planning for network enabling assets. We aim to ensure:

1. There are sufficient off-street bus parking facilities to accommodate current and future fleet needs.
2. We strategically locate driver facilities, including restrooms and break areas, aligned with driver schedules and community service needs.
3. There are adequate restroom facilities at each location to ensure daily driver usage levels and maintain cleanliness and hygiene.
4. Asset designs are inclusive for all drivers, including those with disabilities.
5. Safety measures are implemented, including CCTV, to enhance security and driver safety.
6. Strategic bus layover spaces are available to reduce on-street bus circulation and parking.

The investments outlined in this AMP are focussed on meeting these objectives.

Asset characteristics and current state

Layovers

The location and number of layovers on a network has a significant impact on service delivery. The more strategically placed the layovers, the more efficient the network schedule can be, as the time taken for dead running (bus travelling '*Not in Service*' between trips) is minimized.

We define a formal layover as specifically designated spaces on the network for layover purposes that may have other network enabling assets at the same location. We define an informal layover as spaces that are not designated layover areas but are just regular bus stops or areas where parking on a side road is available to layover and take scheduled breaks.

All our high frequency bus services travel through the Lambton Quay bus interchange with a high proportion originating and terminating their trips there. The recent redevelopment of this location improved safety for pedestrians and buses as well as the addition of EV charging but reduced the total layover capacity to 11 spaces. To address the reduction of layover space, we have leased land at 248 Thorndon Quay and have constructed an additional bus layover with 12 layover spaces and driver facilities incorporating a meal-break room and driver toilets. We Lease the temporary buildings on this site but own all other improvements, the land is owned by Waka Kotahi NZTA which is supplied to us through a lease agreement.

Driver facilities

Our drivers have access to approximately 199 public and driver- only toilets, and three driver meal rooms on the network.11

GWRC provides 8 standalone drivers toilets.

[11] Please note the number of driver meal break rooms included in this asset class plan does not include meal break rooms at the bus operators' depots.

Table 36 below lists out the driver facilities by TA.

Table 36: Driver facilities by TA

Assets	Number on the network accessible to drivers (total outside of depots)	By TA (total estimate- outside of depots)	Number of Driver Only toilets (outside of depots)	Number of public toilets available to drivers
Driver toilets	~199	• WCC: 94 • PCC: 40 • HCC: 30 • KCDC: 12 • UHCC: 13 • Wairarapa: 10	• WCC: 6 (Metlink will own these from mid-2022) • PCC: 0 • HCC: 0 • KCDC: 0 • UHCC: 3 • Wairarapa: 0	• WCC: 88 • PCC: 40 • HCC: 30 • KCDC: 12 • UHCC: 10 • Wairarapa: 10
Driver meal break rooms	3	• 2 WCC owned: (Lambton Interchange – maintenance charged to GWRC and included in this AMP, Reef Street- Island Bay – this is maintained by an agreement between the Operator Transurban and WCC) • 1 GWRC owned: (248 Thorndon Quay)		

Table 37 below lists the current driver meal break rooms on the network.

Table 37: Driver meal break rooms

Driver meal break room description	Ownership/management details
248 Thorndon Quay	Greater Wellington Regional Council
Lambton Interchange	Wellington City Council (building ownership) Greater Wellington Regional Council
Reef Street, Island Bay	Tranzurban

There are eight locations in Wellington where drivers have standalone driver only toilets available for use. . They are typically at the end of Wellington City bus routes, due to the isolated locations they have in the past been suspectable to vandalism. Seven of these locations have been or are in the process of being replaced with new toilet units; the final location is being looked at for feasibility of replacement.

These toilets will be replaced with new purpose-built assets that will:

- provide new, safe, comfortable, and consistent high-quality facilities for bus drivers that will significantly improve the working conditions for the workforce.
- meet current Crime Prevention Through Environmental Design (CPTED) best practice.
- improve driver working conditions and the general attractiveness of the job to aid our current driver shortage.
- be cheaper to maintain.
- provide a standard level of amenity at each site.

Asset Importance

Layovers

Bus layovers are critical in providing safe space to maintain existing network operation and enable growth for future operations, these layovers may be purpose built depending on the operational requirements. Insufficient layover space would have a significant impact on operations impacting service punctuality and reliability across the network. The location of layovers, as well as the number assets at each location, has a

direct impact on how the bus network and timetables are scheduled. The more options for bus layover and depots, the more efficient the network schedule.

Driver facilities

Driver facilities are an integral component of our public transport network. These assets provide facilities for driver rest breaks and meals breaks throughout the workday outside the operator's depots.

Lifecycle Maintenance and Activities

Our approach to managing our network enabling assets is driven from Greater Wellington's strategic priority areas, the agreed Levels of Service, and the asset class strategy. We also incorporate all the applicable standards and requirements for the asset type.

Planning

Layovers

The allocation of layover space plays a role in determining the bus network's scheduling and timetables. In planning for layovers, several considerations are made:

- limiting bus circulation to optimise efficiency.
- selecting layover locations with an emphasis on minimal traffic and pedestrian disruption.
- ensuring walkable routes for staff within layover areas.
- acknowledging surrounding land use to ensure compatibility.
- seeking a balance between cost and operational effectiveness.

According to the recent Central City Bus Layover Study Report, insufficient layover space not only affects current operations but also poses a significant risk to the scalability of the public transport network as demand increases. As urban development continues to encroach on existing layover locations, and with projected bus travel demand set to rise by 38%-59% over the next 10-30 years, proactive planning is crucial. Adequate layover provisions, strategically located, will be essential to support growing service frequencies and ensure that driver break requirements are met. Addressing these constraints early will allow for more effective network scheduling, improving overall service reliability and punctuality.

Driver Toilets and Facilities

The availability and condition of our driver facilities are integral to our public transport network. When planning for these facilities, we consider:

- compliance with health and safety regulations, including the role of the employer/operator.

- prioritizing accessibility for drivers to reduce operational delays.
- establishing facilities that align with the network's operational standards.
- regularly assessing driver feedback for potential improvements.
- aiming for a balance between cost-efficiency and provision quality.

Deliver

Within the Deliver lifecycle stage we procure, construct, and commission the programmes of work that have been identified within the Planning stage. Where applicable, works are integrated into a wider programme schedule, and this incorporates other works at the same locations for resource and cost efficiency.

Once we have identified our required work programme, we work with the relevant TA's and stakeholders to identify any specific requirements, this may include public engagement, building or resource consents, formal consultation, and formal submission of traffic resolutions. This can be a lengthy process which has the potential to delay, change or even halt projects. Once this process is finalised, we follow the relevant procurement strategy to identify who will carry out the work.

The activities within the programme of work are typically set up and managed as projects using our project management framework.

Maintain

We maintain all our assets through maintenance and cleaning contracts with 3rd party suppliers, these contracts cover both planned and unplanned activities to maintain a level of service, and to allow quick rectification of issues as they arise on the network.

The Lambton Bus Interchange is a key strategic asset within the Wellington Bus Network, and as such, its continued operation is critical to help drive service reliability. Currently, WCC owns the interchange building assets; we are in negotiations with WCC to purchase these assets to allow us better asset control which is key to delivering the Bus Services.

Maintenance of the facilities is split between WCC for building assets and our service providers for drivers' facilities and other above ground infrastructure.

The interchange hosts a variety of essential maintenance activities:

- replacing signage, bus stop poles, and addressing road surface repairs.
- maintaining shelters, bus stop seats, the standing area, and pedestrian canopies.
- undertaking reactive and planned maintenance.
- monitoring and maintaining security

- cleaning public and driver toilets and replenishing consumables.
- undertaking general building maintenance to structure, access and facilities

The 248 Thorndon Quay facility provides additional layover and drivers facilities to supplement Lambton interchange; we maintain maintaining all assets at this location through maintenance, cleaning, and security contracts. In addition to these services, we also replenish consumables for the rivers.

We facilitate full maintenance and cleaning services to the driver only toilets on the network. This encompasses regular cleaning, replenishing consumables, and addressing any challenges that arise, from securing units against unstable conditions to promptly rectifying structural or fixture-related issues. Cleaning and consumables are charged back to the appropriate operator.

Forecast expenditure

The work programme and corresponding expenditure in this ACP is based on identified needs and is derived from the expenditure in GWRC's 20234-2054 Long Term Plan (LTP) and Regional Public Transport Plan (RPTP). At the time of writing, we have not received clarity on funding from the National Land Transport Fund (NLTF). If the funding from the NLTF changes from that allowed for in the LTP, the investment plan presented within this ACP will be reviewed and re-prioritised.

The total forecast in a 30-year period for network-enabling assets is $76.83 million, comprising $51million in opex and $25.83 million in capex. Our 30-year investment strategy aims to enhance stakeholder satisfaction, ensure safety, and meet the increasing demand for bus services by minimizing infrastructure constraints and expanding layover spaces. This strategy encompasses maintenance, leasing, renewals, and strategic improvements to ensure robust public transportation across Wellington. Although the 2024 Long-Term Plan (LTP) is approved, the budget remains provisional as we await approval from NZTA, our partner co-funding 51% of the budget.

Opex

The opex forecast for the network enabling assets allows for maintenance and cleaning of network enabling assets, corridor clearance, and ongoing leases:

- **Lambton Interchange Maintenance:** $23 million. This includes annual maintenance costs over 30 years, covering corrective works and major renewal efforts. We currently fund WCC monthly for the maintenance of the interchange. Negotiations are underway with WCC to possibly acquire the interchange to streamline operations and financial planning.
- **Driver Toilets Maintenance and Cleaning:** $6 million. Annual expenditures of $145k over 30 years include cleaning and servicing standalone driver toilets three times a week, with additional leased and serviced temporary toilets as

needed to ensure continuous availability. This approach ensures continuous availability and operational readiness of facilities across the network.

- **Tree Clearance for Buses:** $12 million. Annual costs of $300k over 30 years cover fixed fees to WCC for enhanced tree clearance and additional contractor services for new double-decker bus routes. This facilitates the safe operation of double-decker buses by ensuring all paths are free from obstructions.
- **CBD Layover Lease:** $11 million. Lease costs of $120k annually, increasing to $350k from 2028, cover a temporary layover at 248 Thorndon Quay, with plans to secure and develop a permanent facility by 2028. This strategically important location is essential for maintaining efficient bus transit times and effectively managing traffic congestion in the CBD.

Capex

The capex forecast of $19m allows enhancing layover spaces, route infrastructure, and driver facilities to meet growing demand, improve service levels, and maintain operational efficiency.

- **WCC Public Transport Assets Acquisition:** $12.5 million. This aims to acquire assets associated with the Lambton Interchange from WCC. Owning these strategic public transport assets will ensure continuity in public transport services and enhance amenities for customers and operators.
- **Wellington CBD EV Bus Layover/Depot:** $2.8 million. This involves locating and constructing a layover facility that can accommodate up to 30 buses, including a driver rest area and an EV opportunity charging station. This initiative is crucial for supporting the deployment of electric buses and improving operational efficiencies within the CBD.
- **Route 2 Infrastructure:** $2.5 million. This includes infrastructure improvements with the introduction of articulated buses to accommodate higher-capacity vehicles. Enhancements will focus on roads and bus stops, emphasizing accessibility and bus shelter improvements.
- **Route 110 Infrastructure**: $1.8 million. This involves preparations to introduce double-decker buses on Route 110, which will require significant infrastructure upgrades to accommodate these larger vehicles.

Key drivers for the uplift in driver facilities are:

- changes in the 2018 ERAA that impact driver meal break requirements.
- feedback and complaints from various stakeholders, including drivers, the public, operators, and unions.
- The Health and Safety at Work Act necessitates enhancements in driver working conditions.
- our commitment to make bus driving an appealing career choice for new recruits.

- the need to support the existing network's functionality in the central city.
- the need to support future growth.

The financial expenditure for our network enabling assets is shown in Figure 83.

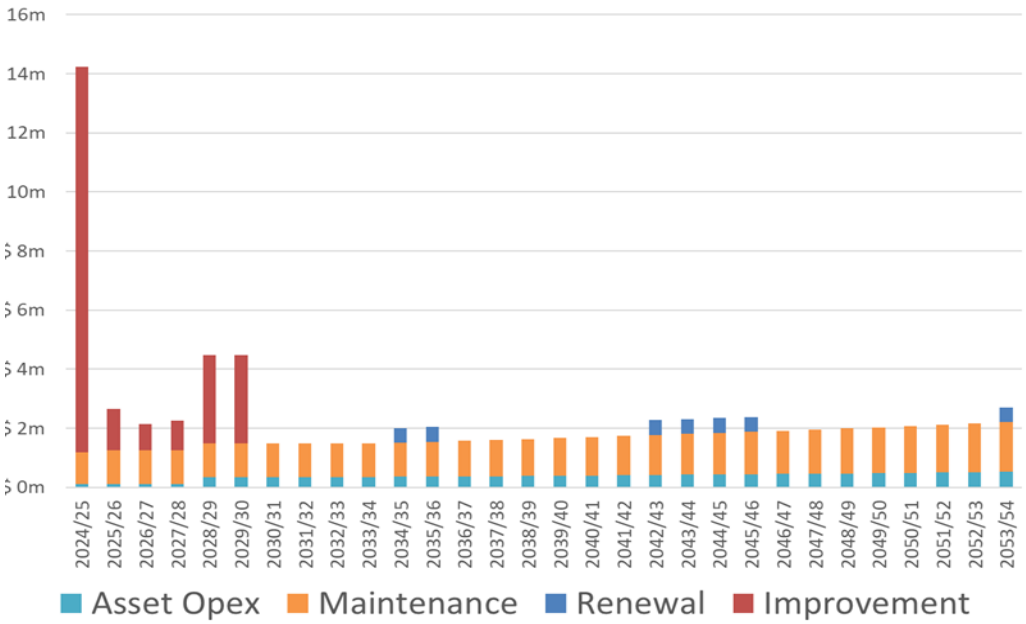


Figure 83: Bus and Ferry Network Enabling Assets forecast expenditure.

Bus Fleet, Depot, and EV Charging Overview

We have an extensive bus network within and around the cities and towns across our region. Our bus network also connects to the rail network for journeys between centres.

Whilst we do not own most of the bus fleet and a significant amount of the supporting fleet infrastructure, the bus fleet operating on our public transport network remains an integral component of our asset management planning and investment. This asset class plan describes our asset management approach to the bus fleet and corresponding infrastructure such as bus depots and EV charging infrastructure.

We have contracted four bus operators to operate our bus network. Our bus operators are responsible for ensuring the buses that operate on our network comply with the Partnering Contract, which includes the Requirements for Urban Buses (RUB) and the Vehicle Quality Standards (VQS) and a number of contractually mandated plans. As part of our contract with our bus operators, we monitor compliance with these requirements.

Our Airport Express (AX) service, with ten fully electric purpose-built buses, runs between Wellington Railway Station and Wellington International Airport approximately every 10-20 minutes depending on the time of day, seven days a week. This service connects our regional rail and bus networks to the airport.

Consistent with our ongoing drive to improve services to our communities, in 2022 as a 12-month trial, we launched an on-demand service in Tawa and Grenada North. This service is an accessible and flexible form of public transport. To use the service, passengers request a vehicle with the Metlink On Demand app. A wheelchair accessible, 14-seater bus is allocated to the passenger, shared with others whose journeys are suitably similar. The bus picks up and drops off passengers at approximately 600 locations (‘virtual stops’), mostly in areas without fixed route services. For this trial, we have purchased six small second-hand diesel buses. In June 2023, we extended the trial for another year, and the service has been expanded from Tawa and Grenada North to include Porirua CBD. As the trial continues, we will assess the viability of extending the service to Aotea and Cannons Creek.

GWRC approved the strategic public transport asset control strategy in August 2023, and it was approved for the 2024 LTP. This strategy provides that GWRC will increase its control of public transport assets over the long term to ensure it can meet its decarbonisation objectives and facilitate the move from private vehicle to public transport. The first set of investments in the strategy’s implementation roadmap relate to increasing GWRC’s control of strategic bus depots as these require significant long-term investment and, if operator controlled, can reduce competition in future bus tenders. This strategy would fundamentally change the status quo in terms of contracting, and financial forecasting.

A zero emission buses (ZEB) roadmap is currently being developed. This will outline the most feasible plan for transition to a full ZEB fleet across the region looking at costs, benefits, and timings to maximise the emissions reductions. Once this is finalised, we will incorporate the plans into the AMP.

By the end of 2031, which is the end of the last of the current contracts with our operators, approximately 8% of our bus fleet will be diesel buses. We are planning for our fleet to be 100% electric by 2035.

Strategic objectives

Metlink's strategic focus areas directly determine how we plan, develop, maintain, and operate our bus fleet, depot and EV charging assets. These assets:

- drive the extent to which we decarbonise fleet operations.
- determine the environment our customers experience while travelling on public transport.
- enable the reliable operation of our fleet through provision of facilities to maintain vehicles and to ensure reliable safe vehicles are used in service.
- provides a means for charging our new EV vehicles.

Therefore, our bus fleet, depot and EV charging assets:

	Support **patronage growth** by providing vehicles which are reliable and have features which create a comfortable and safe environment for our customers to travel on and attract new users.
	Support **Access and Accessibility** by providing vehicles with features that improve accessibility and allow travel to all.
	Support **Decarbonisation** by reducing fleet emissions through the introduction and maximising the use of zero emission vehicles.

To achieve these outcomes, we have established the following asset strategies that guide our planning. For the bus fleet, we aim to ensure:

- a transition to a fully ZEB fleet
- the fleet quantity and size are adequate for current and future requirements.

- vehicles are reliable and have features which create a comfortable and safe environment.
- vehicles have features that improve accessibility and allow travel for all.

For the depots, we aim to ensure:

- vehicle stabling capacity is adequate for current and future requirements.
- the capability of the facilities enable the new electric vehicles to be maintained and ensure reliable and safe operation.

For the EV charging, we aim to ensure:

- the electrical charging infrastructure is adequate for charging the EV fleet at the right time, the right location, and the right level to maximise vehicle utilisation.
- the regional electrical network can support the transition to fully electric fleet and accommodate network growth.

The investments outlined in this AMP are focussed on meeting these objectives.

Asset characteristics - current state

The buses within our fleet comprise a variety of manufacturers, models, and size. Currently, most of the buses are diesel but we are moving to a zero-emission fleet. All buses on our network are required to be available and be of the right size, as defined by the timetable.

Our current contracts with operators were established under the Public Transport Operating Model (PTOM). Under our PTOM contracts, operators are responsible for their own depots, buses, and staff. Our contract lifespans are between 9 and 11 years with most of our current contracts reaching their initial terms in 2027. Any extension to the contract terms is at our discretion and must have the approval of Waka Kotahi NZTA. Within the contract, there is agreement that we take ownership of some of the buses, chargers, and depots at the expiry of the contract. We refer to these as “transferring assets”. The contract details a mechanism which will be used to determine the price we pay for such assets.

Our contracts also specify the requirements of bus operators with respect to fleet, chargers, and depot. These include:

- the Peak Vehicle Requirement (PVR) of each bus size
- performance requirements and the features the buses must have as set out in the RUB and VQS
- specific exhaust emission requirements

- provision of an inventory of its buses, including spare buses, which make up its Metlink fleet
- maximum age of the bus
- the average age of the operator's fleet, including the spare buses
- consultation and agreement on changes made to the fleet and depot
- bus fleet maintenance plans for transferring buses, batteries and chargers
- bus fleet inspection and cleaning plans for all buses
- vehicle acquisition plans
- electric vehicle charging plan
- depot acquisition programme.

The contracts include key performance measures, which include timetable reliability and punctuality measures.

PTOM has been replaced with the Sustainable Public Transport Framework (SPTF). The SPTF, which enables different asset ownership arrangements (including PTA owning assets), is currently being implemented through the Land Transport Management (Regulation of Public Transport) Amendment Act 2023 and the development of operational policy by Waka Kotahi NZTA.

Population, age profile, and life expectancy

Table 38 shows the profile of our bus fleet by bus operator.

Table 38: Bus fleet population by bus operator

Bus Operator	EV	Diesel	Total Population	Age 0-5 yrs	Age 5–10 yrs	Age 10–15 yrs	Age 15-20 yrs
Metlink		6	6		6		
NZ Bus	51	109	160	78	10	39	33
Transurban	42	193	235	150	85		
Uzabus		124	24	22	1		1
Mana	10	36	46	29		17	
Total	**98**	**351**	**449**	**279**	**102**	**56**	**34**
Transferring assets (included in the total count above)	**11**	**50**	**61**				

The addition of EV buses significantly reduces our carbon footprint.

Currently, there are 13 depots on our network. We do not own any depots; they are provided by our bus operators.

Table 39 shows the owner and number of bus depots for our bus network and stabling capacity.

Table 39: Bus layovers and depots

Operator	Depot location	Stabling cap Stabling capacity	# Buses currently stabled
NZBus	Kilbirnie,	150	104
	Kaiwharawhara,	20	12
	Karori,	22	22
	Eastbourne	18	12
Tranzurban	Upper Hutt (transferring asset)	49	37
	Lower Hutt (transferring asset)	63	40
	Rongotai	64	61
	Grenada	130	67
	Wainuiomata (transferring asset)	20	16
	Masterton (Transit)	14	9
Uzabus	Paraparaumu (transferring asset)	30	24
Mana	Newlands	32	30
	Waitangirua, Porirua	5	5
	Wellington Airport, Rongotai (transferring asset)	10	10

Table 40 shows the EV charging stations on our network by operator and location. Currently we do not own or manage the EV charging infrastructure on our network.

Table 40: EV charging stations by operator and location

Operator	EV charging station location
NZ Bus	Kilbirnie Depot
Tranzurban	Reef Street, Island Bay Rongotai Depot – Cairns St Grenada Depot – Antilles Place Lambton Interchange
Mana	Wellington Airport depot, Rongotai

Life expectancy

The maximum permitted vehicle age for an urban public transport bus is 20 years. In accordance with our contracts, the maximum average age of an operator's bus fleet must not exceed 10 years and buses introduced to the fleet must be new buses. The operational life of chargers and EV batteries is approximately 12 years.

Asset health

All buses are compliant with transport regulations and are assessed through the Certificate of Fitness (COF) process. Buses are required to have a (COF) at least every six months. Most of the buses within our fleet were new in 2018 and these are in good condition. Our buses are compliant with the RUB . There are 10 buses in service which we defined as "interim buses" as they do not fully comply with VQS and can be identified by the fact they are not in Metlink livery. These buses have been permitted to operate as there is a need for additional capacity inside the lead-time for new electric buses and depot developments. The new buses that are to replace these interim buses will be delivered through to early 2026. All these new buses will be electric.

As we do not own, operate, or maintain the bus depots, the asset health of the depots is unknown. However, the capacity for stabling buses at each depot and the electrical infrastructure capacity to each depot site is important to the growth plans for the network. At least annually the operators provide the updated Vehicle Acquisition Plan (VAP) in which the current number of buses stabled at each depot is noted plus the stabling capacity of each depot. As a product of the acquisition of new buses the

operator is required to update the VAP and, if required a depot acquisition plan, providing details relating to the development plans for the depot and electrical infrastructure to support the planned network growth.

We currently have 11 new transferring EV buses and 5 chargers. This number will increase as new fleet is introduced.

When EV chargers are commissioned into service, operators are required to provide a charging certificate and charging plan. This certificate and plan cover factors that relate to the regulatory compliance and assurance that the charging infrastructure is capable of permitting the buses to comply with the timetable requirements and maximise the utilisation of these buses to optimise the value of decarbonisation. .

Asset importance

Buses are critical to our public transport network. The network is designed around having a bus of a predetermined size (passenger loading capacity) operating on a route at a predetermined time that customers can rely on. Buses also have a range of design features (as defined by the RUB and VQS) that are important for the comfort and security of customers. The buses must comply with these features upon entering the fleet and consistently throughout their operating life.

Likewise, bus depots and their location are of fundamental importance to the efficient operation of the bus network. Those depots with EV Chargers are critically important for the provision of our services.

Where a single bus is unavailable, often there would not be an impact on the network due to a 10% vehicle spare ratio and the ability to move buses between EV charging locations. Should an entire fleet of buses or EV charging network be unavailable, then the network would not be able to operate.

Asset risk

The following describes the key asset risks and their mitigations for our bus fleet, EV chargers, and depots. These risks manifest across the asset base to varying degrees.

Operator contract performance: There is a general risk that the operators do not manage their buses and charging infrastructure properly, which may lead to poor delivery performance and poor customer experience. To manage this risk, we undertake contract management activities as enabled by the contract. For the buses and charging infrastructure that are transferring assets, there is the additional requirement for the operator to provide a maintenance management plan. We audit against this plan.

Bus breaks down: The operator has approximately 10% more buses than the Peak Vehicle Requirement (PVR) of each bus size to allow for routine maintenance and

breakdowns. We work with the operators to ensure that maintenance plans are appropriate & focused on preventative/predictive practices.

Bus is damaged in an accident: The operator has approximately. 10% more buses than the PVR of each bus size to allow for routine maintenance and breakdowns. We track damage causes and ensure that roading infrastructure is not the cause.

Insufficient buses to meet future patronage demand growth: We have developed a forecasting model based on the patronage trends and projections to identify the operators' future fleet and depot capacity requirements.

Buses that are operational in a fault condition. We track customer complaints and follow up on trends and individual cases. We use the Vehicle Condition Audit (VCA) programme to audit the condition of the buses. We work with the operator to develop a process that identifies the importance of typical faults and the nature of the response. Safety related faults are picked up through the certificate of fitness (CoF) process. We get regular reports from Waka Kotahi NZTA on the compliance status of the Metlink bus fleet.

Loss of a depot or loss of access to the depot: Risks include tsunami, sea rising (Eastbourne), land slips, earthquake, fire, oil and diesel containment and fire mitigation (because of large diesel tanks for filling the buses). This risk is yet to be quantified. All future depot sites that GWRC are considering investing will be assessed for these risks during the feasibility stage.

EV charging fault that causes buses to be unavailable for service (this includes an electricity network outage). The operator provides charging and business continuity plans. The charging plan details the business processes in place to mitigate charger faults and un-availability. Operators do not currently have backup generators (apart from Mana which is exclusive to the Airport Service bus depot). One operator has multiple sites including on-route chargers that mitigate the risk. We are currently refining the charging plans to include risk mitigation. Charging systems are required to be common such that they could be used to charge any electric bus in the network.

Electric bus fire during charging. There is an emerging, although very low risk, that a fault with an electric bus during charging could result in the loss of several closely parked buses. GW is considering this in the depot design process we are working through and is making the operators aware of our research requesting their consideration and response.

Buses do not comply with the RUB and VQS: All buses are assessed for compliance with the RUB and VQS before they are permitted to enter the Metlink fleet. The VCA programme is used to assess the state of ongoing compliance of the buses.

Buses are not clean: The minimum cleaning requirements for buses are detailed in the partnering contract. The VCA programme audits against these requirements.

Bus fleet performance

Generally, due to the nature of the PTOM contract, any data that relates to the network impact of the performance of bus fleet assets is limited and high level; this makes it difficult to proactively manage the performance of bus fleet assets. However, there are some areas that are facilitated by the contract.

As part of the VQS, we have a vehicle condition assessment programme focused on customer experience attributes. This programme identifies the items to be audited and provides a non-conformance scaling system to rate the performance and determine the corrective action timeline and actions that must be taken. This programme is currently being developed.

The operator is required to produce a bus inspection and cleaning plan, which must contain the minimum requirements identified in the contract.

Customer complaints are collated within our IT system under. Safety, Vandalism, Presentation/Cleanliness, Poor Maintenance and Comfort/Heating categories. We use this to drive improvement activities. Individual complaints are sent to operators for response. Significant issues are individually investigated by the operators with GW oversight.

For buses and charging infrastructure that are transferring assets, the operator must produce a bus fleet and charger maintenance plan. This details all the maintenance activities required to optimise asset performance and life. These plans are required to be approved by GW as appropriate. We are developing an audit programme to ensure compliance with these plans thus protecting GW's interest in these assets.

Asset Management Activities

A strategic driver for the management of our bus fleet is the planning activities associated with growth and decarbonization of our bus fleet. We are on a pathway to provide a zero-carbon bus fleet by 2035 for the Wellington region.

The buses, EV chargers and depot are managed to the extent that the PTOM contractual provisions facilitate. This is through the review and approval of the plans that the operator is required to submit. We audit against these plans and contractual specifications (RUB and VQS). We also audit the CoF compliance of the bus fleet. We carry out research into emerging issues and trends and make amendments to contractual specifications. This activity also leads to leading design modifications projects that are carried out by the operators.

The Vehicle Acquisition Plan details the activities relating to buses being retired and new buses being introduced into the fleet. It is through this plan that the fleet capacity, age, and average age profiles are managed.

Planning - Growth and decarbonisation

Government policy states that all new buses purchased from 2025[12] will be zero emissions, and all public transport fleets will be zero emissions by 2035. Our plan is to reduce public transport emissions by decarbonizing our public transport fleet by 2030.

To accelerate decarbonisation of our bus fleet (and as outlined in the Wellington Regional Public Transport Plan 2021-31) we are:

- increasing the number of electric buses to 100 by 2023
- planning for core service buses to be electric by 2030 (Routes 1,2,3,7,110,120,130,220, and AX)
- Implementing the agreed pathway to further accelerate decarbonisation of the fleet by 2030
- continuing to work towards a more efficient bus network.

As outlined in 2021-31 LTP, the agreed pathway is:

- all new buses (for growth & age replacements) will be electric.
- electric buses or zero emission buses will be a requirement within new contracts (2027 and 2030). The current contracts have initial terms through to 2027 and 2030.

A 10-year network patronage forecast is produced and periodically updated. This forecast is then translated into the number of buses, by bus size, by depot required by each operator. This work also identifies the part of the network for which the capacity is required and therefore the impact on depot requirements. This is also informs the LTP budget and the vehicle acquisition plans with the operators.

To address both decarbonisation and network growth targets our plans consist of:

1. Proposing new electric articulated buses as the preferred option for growing bus capacity on Route 2.
2. Increasing the total EV buses in the fleet to 119 by 2024.
3. Replacing end-of-life diesel buses with EV buses.

[12] This is for all public transport buses first registered before 2025.

4. Optimising the allocation of EV using the network planning process and our emissions modelling tool. EVs will be prioritised onto core routes (Routes 1,2,3,7,110,120,130,220,AX).

Inspections and Maintenance

The maintenance activities for the on-demand buses that we own are contracted out to the on-demand service operator. This contract includes the maintenance plan and the requirement to use only original equipment manufacturer parts. Also included is the requirement for maintaining records and reporting to us.

There is no maintenance-related reporting requirements for the buses and EV chargers that are owned by the operators and are not transferring assets. For the operator-owned buses and EV chargers that are transferring assets the operator is required to provide a maintenance plan.

All buses, irrespective of being transferring assets, are subject to the VCA audit programme, which incorporates compliance with the RUB/VQS and cleanliness.

For all buses, the operator has a contractual requirement to ensure the buses and EV chargers comply with all statuary requirements.

The operators are responsible for the management and maintenance of their EV chargers and their depots including all equipment within the depot.

Operations

For most of the bus fleet, chargers, and depot, we pay annual lease type payments to the operators through the life of the contract.

Forecast Expenditure

The work programme and corresponding expenditure in this ACP is based on identified needs and is derived from the expenditure in GWRC's 20234-2054 Long Term Plan (LTP) and Regional Public Transport Plan (RPTP). At the time of writing, we have not received clarity on funding from the National Land Transport Fund (NLTF). If the funding from the NLTF changes from that allowed for in the LTP, the investment plan presented within this ACP will be reviewed and re-prioritised.

The 30-year forecast total expenditure for bus fleet, depots, and EV chargers is, $3.296 opex, and $103m capex.

The opex costs are based on the current PTOM contract arrangements, and lease and operating costs for the new Southern depot.

Under PTOM, the operators purchase the assets and then charge Metlink an annual fee like a leasing arrangement.

There is an opex forecast of $53m that is associated with activities related to bus fleet that are not the responsibility of the operators to fund but cannot be capitalised by us. This covers design changes to buses required resulting from new initiatives, investigations, research, contracted out audit services, and unplanned maintenance associated with the six on-demand buses owned by GWRC.

There is $103m capex. Of this $2m is for the replacement of the six small buses owned by GWRC when they reach 20 years of age, the remaining $101 million is for the construction of a new depot in Lyall Bay. The new depot provides GW with a key strategic asset and ensures this critical location is secured for future operations regardless of contract model or supplier.

Figure 84 shows the projected forecast for bus fleet, depots, and EV chargers under the existing PTOM contracting model with GWRC developing and owning a depot in the South.

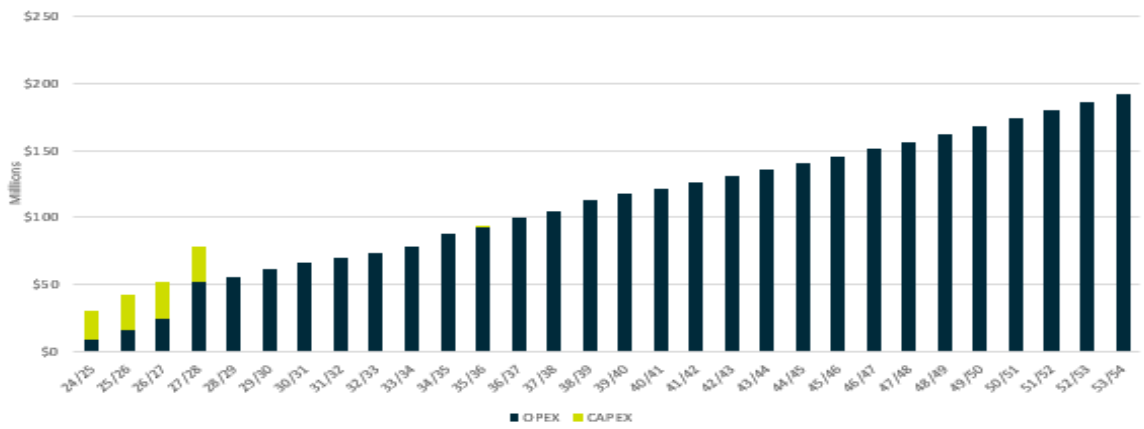


Figure 84: Forecast for bus fleet, depots, and EV chargers under the existing PTOM model

Figure 85 shows the estimated projected opex and capex costs if we are to own depots, the opex savings indicated will be offset against the other opex costs. This approach is forecast to require $356m in capex over the next 30 years and save $201m of opex compared to the current operating model.

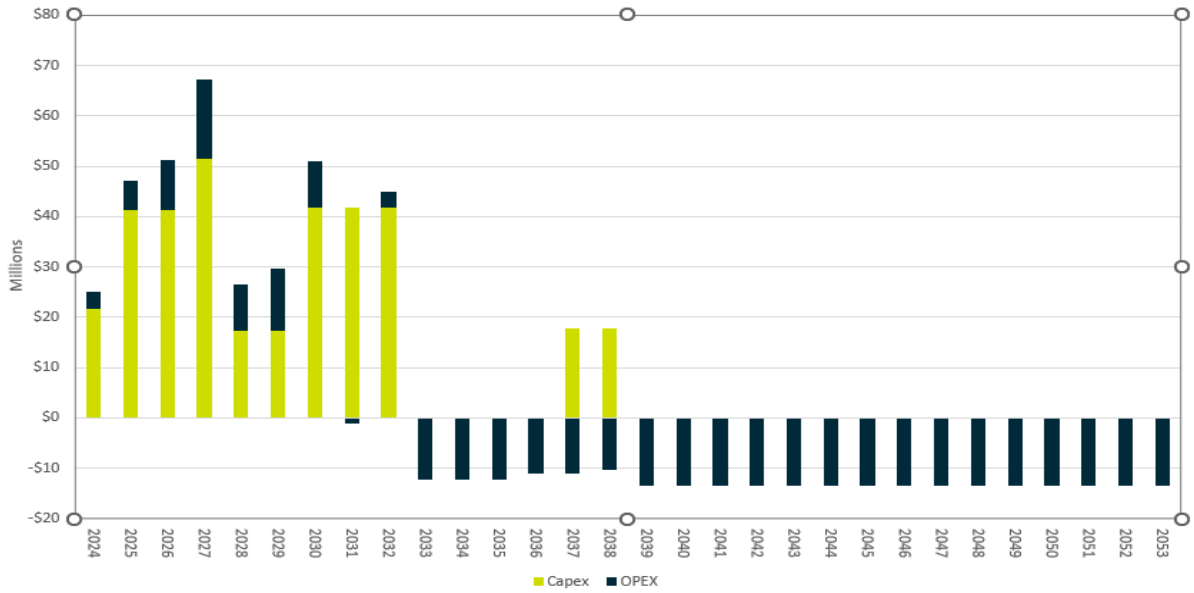


Figure 85: Forecast depot ownership forecast

Customer Insights Assets Asset Class Plan

This asset class plan provides a description of our customer insights assets. We categorise these into the following areas:

- Real Time Information (RTI) including
  - RTI
  - Automatic Passenger Count (APC Rail)
- Data Asset Services including
  - Data Warehouse
  - Open Data Portal
- Accessibility including
  - On Bus Announcement (OBA) system
  - Accessibility Indoor Navigation.

Digital information has become a key dependency in public transport customer experience. Customers expect accurate and responsive information to help them plan their public transport journey. Improvement of digital information is a key part of our strategy for retaining existing customers and growing patronage.

Description of our customer insight assets

Below is a brief description of the assets covered in this asset class plan.

RTI

RTI system

Our RTI system incorporates information display screens, and the back-end systems required to collect and publish the information to the displays, including tracking devices. Our RTI system currently services approximately 300 bus stop and railway station signs and approximately 453 tracking devices installed on buses in the fleet. Over time, we have adapted the RTI software to provide real time information through the Metlink website and App and for the provision of data for our operator performance management systems, which are required for managing operator contracts. The current RTI system (RTI 1.0) was introduced in 2011. We are in the process of replacing this with an RTI 2.0 system, which will also include some larger RTI screens at a few of our stops.

Our RTI displays vary from having three lines of information, which is the most common, to six, eight, or 18 lines. A few key locations have LCD televisions displaying real time information.

Rail Automatic Passenger Count (APC)

The APC is an onboard system installed in 2023 to automatically monitor passenger flow on our Matangi train fleet to enable us to better account for rail patronage; this allows us to undertake data driven capacity and network planning as well as put in place revenue protection mitigations as we move towards electronic ticketing to ensure enhanced financial sustainability. It will also allow us to move forward with future projects, such as highlighting to passengers the least full carriage to prevent overcrowding/passenger bunching for a more satisfactory journey.

Data Asset Services

Data Warehouse

Our data asset service warehouse aggregates data from different sources into a single, central data store. It allows us to store, organise, manage and run analytics on the data we collect including but not limited to service design planning, timetabling, reliability and journey prediction.

Open Data Portal

Our open data portal allows access to ours and third parties' websites and apps to provide real time information to our customers related to our public transport services. The data available on the portal includes journey times, service availability such as next bus/train schedules, cancellations, and service notifications such as special events/festivals.

We seek to increase our reach and target patronage growth by continuing to invest in the provision of customer information through third-party, independent websites, and apps through provision of our open-source data and application programming interfaces. This provides easy integration of data and information. Independent travel information websites and apps can also provide a higher level of specialisation and innovation.

Accessibility

On Bus Announcement (OBA) System

The primary purpose of the OBA system provides bus journey information to people with visual and cognitive disabilities. It provides audio-visual information about the next bus stop, key interchanges, the current location of the bus, and network related information (such as public health messages and conditions of carriage). The functionality of our OBA system is a core component of our goal to provide a 'fully accessible' bus fleet. The system improves accessibility for passengers who are new or unfamiliar with a bus route.

Rollout of the OBA system is almost complete. The screens and speakers on the bus used for OBA are owned by the bus operators.

Accessibility Indoor Navigation

Accessibility indoor navigation wayfinding apps provide orientation and navigation for people with disabilities, or in disabling situations, using a mobility assistance application. These apps use a network of Bluetooth beacons to guide people from point A to point B. We are currently trialling a wayfinding app on the Ground Floor of the Greater Wellington Cuba Street Office for ease of installation and monitoring. The overall purpose of trialling wayfinding apps is to make our public transport network more accessible by providing people with disabilities a tool to navigate our transport hubs.

Strategic objectives

Metlink's strategic focus areas directly determine how we plan, develop, maintain, and operate our Customer Insights Assets. Our Customer Insights Assets:

- provide reliable information over suitable secure channels to our customers.
- gather information to support our customer's journeys to support accessibility, higher quality trips, and the move from private vehicle to public transport.

Therefore, our Customer Insights assets:

	Support **patronage growth** by providing provision of information to help customers plan their journey, and to meet our customer's evolving information needs. This includes providing reliable, real time information including patronage indication, next commuter service information and timetable adjustments backed in secure, valid data to allow our customers to select the right option for them.
	Support **Access and Accessibility** by ensuring our real time information and office facilities are accessible and convenient for all users.
	Support **Decarbonisation of the Public Transport Fleet** by making our network more attractive to our customer groups by promoting an accessible, adaptable, reliable service with transparent options.

To achieve these outcomes, we have established the following asset strategies that guides our planning for Customer Insights Assets:

- the RTI signage is serviceable, clear, and accurate, backed by sound data.
- our network is equally accessible to all our end users, including plain, uncomplicated audible announcements.

- our offices are equally accessible to all our end users, including operational accessible indoor navigation.
- our real time data is coherent, secure, and authentic, and is available for use by Metlink and authorised third parties.
- our data warehousing capability is safe and effective, with multiple quality interlocks to ensure proper use for trend analysis.

The investments outlined in this AMP are focussed on meeting these objectives.

Asset Importance

The quality and reliability of our digital customer information assets is essential for positive brand reputation and for improving customer satisfaction. It is also a significant contributor to encouraging people to move from private vehicles to public transport. With the increasing dependence of customers on digital interactions to undertake day-to-day tasks and an increasing expectation that those interactions will be intuitive and helpful, our real-time customer information systems are an essential part of both regional and national strategies for retaining and growing public transport patronage.

The effective performance of our customer insight assets includes the provision of information that can be used in specific applications that support accessibility, and the provision and storage of data to inform network design and performance improvements, including monitoring operator performance.

Asset and Service Performance

If one of our customer insight systems fail, our public transport network would still be able to operate, but the level of service would diminish. Below we discuss the performance of our customer insight assets.

RTI

RTI system

Our current RTI system is reaching the end of its life. It is failing to meet customer and business expectations of accuracy and reliability required for journey planning and contract management involved for the 40+ million annual public transport trips currently delivered. The provision of timely and accurate customer information is currently our most significant customer pain-point. There has been a notable decline in customer satisfaction with the current RTI system in recent years.

Replacement of the real-time information system for our customers and network operators will improve overall network accessibility and performance, providing signage that is clear, accurate, serviceable, and backed by sound data. RTI supports the shift from private vehicle to public transport by providing signage and data that make our customers more confident in planning and switching.

Rail Automatic Passenger Counters (Rail APC)

Our previous APC system was not fit for purpose as it could often take 40+ days to download a trainset's APC data. During 2023, this system was replaced with a system incorporating the data of passenger counts into a train onboard computer. This system is now fully operational on the Matangi fleet. The upgrade and overhaul of this system makes our patronage data more accurate and will allow patronage predictions to be available on our Metlink website shortly.

Data Asset Services

Data warehouse

Our data warehouse pulls data from multiple sources and converts this data to allow us to report on aspects of our public transport network, visualise the data, extract data and reports.

Open Data Portal

As one of our primary touchpoints with our customers, the quality of the online experience has a significant influence on customer satisfaction and brand reputation. The universal challenge of managing online channels is the need to keep pace with customers' rapidly evolving expectations of improving functionality which is driven by their daily experience of using numerous online channels.

Improvements to the usability and functionality of our website and commuter app over time has been an opportunity to:

- increase customer satisfaction with the delivery of Metlink information and overall perceptions of service delivery
- encourage the increased adoption of online information channels and move customers away from more expensive information channels, such as printed timetables.

Accessibility

On Bus Announcement (OBA) system

The assets associated with the OBA system are currently being deployed. As such, there are no current performance events for OBA.

Accessibility Indoor Navigation

It has been identified that the initial wayfinding app that we trailed was not user friendly and the back-end system was not widely adopted elsewhere. A trial with a new wayfinding app is currently underway. The overall purpose of trialling wayfinding apps is to make our public transport network more accessible by providing people with disabilities a tool to navigate our transport hubs.

Asset importance

Our information systems rely on the continuous supply of electricity and telecommunications. If they are disrupted, our information systems may also be disrupted, meaning that our customers would no longer be able to plan or be informed about their journey status. Individual signs going down or being damaged are not critical to the entire network but need to be repaired as soon as possible upon report to keep individual and more rural locations connected.

Our accessibility projects are critical to the disabled community; without which they would struggle to access our network, plan their journeys, and access our offices for support.

OBA is critical to our disabled community. Again, one individual bus having an unserviceable OBA system isn't destructive to the entire network but should be remedied quickly.

Secure back-up and storage of data is essential. Our third-party app providers also depend on our open data portal being serviceable and without these apps, our passengers will be unable to plan their trips or know whether their trip has been rescheduled.

APC is not critical to the train running. One being unserviceable will not stop that train from running its scheduled journey. It is, however, important that we have access to this data so that we can allow our routes and timetables to be informed by accurate patronage data, along with supporting revenue protection.

Asset Management Activities

Our asset management activities and planning ensure that our investment in customer insight assets is targeted and prioritised to meet national and regional strategic priorities.

During the development and/or replacement of systems our planning:

- ensures seamless integration
- uses the opportunity to reduce lifecycle costs eg build componentised systems
- removes the reliance on expensive propriety hardware
- ensures our technology keeps pace with customers' expectations of improved accuracy and responsiveness from real-time information.

Future Technologies

Public transport technologies and services are rapidly changing. The future technology we are forecasting is the installation of wi-fi on our rail rolling stock and bus fleet, and full width digital signage across our rolling stock fleet.

Financial Expenditure

The work programme and corresponding expenditure in this ACP is based on identified needs and is derived from the expenditure in GWRC's 20234-2054 Long Term Plan (LTP) and Regional Public Transport Plan (RPTP). At the time of writing, we have not received clarity on funding from the National Land Transport Fund (NLTF). If the funding from the NLTF changes from that allowed for in the LTP, the investment plan presented within this ACP will be reviewed and re-prioritised.

The key investments for our Customer Insights Assets portfolio encourages improved customer experience across all modes of travel giving the public more confidence and certainty when travelling, making it easier for them to utilize public transport confidently. Improvements to RTI allow customers to effectively plan their journey and meet their evolving information needs and expectations.

Key investments include:

- **Accessibility**
  - **Accessibility Indoor Navigation.** We are currently in the process of scoping a new trial of a wayfinding app. We are using information from overseas experience to inform our decision making.
  - **On Bus Announcement system.** We are finalising the installation of the OBA system. OBA provides audio-visual information along each bus route about the next bus stop, key interchanges, the current location of the bus, and network related information (such as service alerts).

- **Data Asset Services:**
  - **Data warehouse:** Our new data warehouse will continue to evolve to meet our service requirements and modern data standards as we become more data driven in our decision making. This is likely to be an ongoing cost over the asset life.
  - **Open Data Portal:** We currently run an open data portal to make our real time data able to be drawn upon by our own Metlink Website and App, but also able to be drawn upon by third party apps (GoogleMaps, AppleMaps for example. This service is currently running smoothly and will continue to evolve in terms of available data.

- **RTI 2.0** Real time information (RTI) for our bus and ferry services is displayed on electronic displays across approximately 6% of our bus and ferry stops on our network. The majority of these RTI displays are within Wellington City. RTI can also be viewed online through our website, App, and third-party apps such as Google Maps. With our customers' increasing dependence on digital interactions to undertake day-to-day tasks, and an increasing expectation that those interactions will be intuitive and helpful, our real-time customer

information systems, website, and commuter App are an essential part of our strategy for retaining and growing public transport patronage. Our customers have come to expect accurate and responsive information to help them plan their public transport journey.

Our RTI system requires replacement as it is failing to meet customer and business expectations of accuracy and reliability. Replacement of the current system will improve overall network accessibility and performance.

Figure 86 shows our customer insights assets opex and capex forecast.

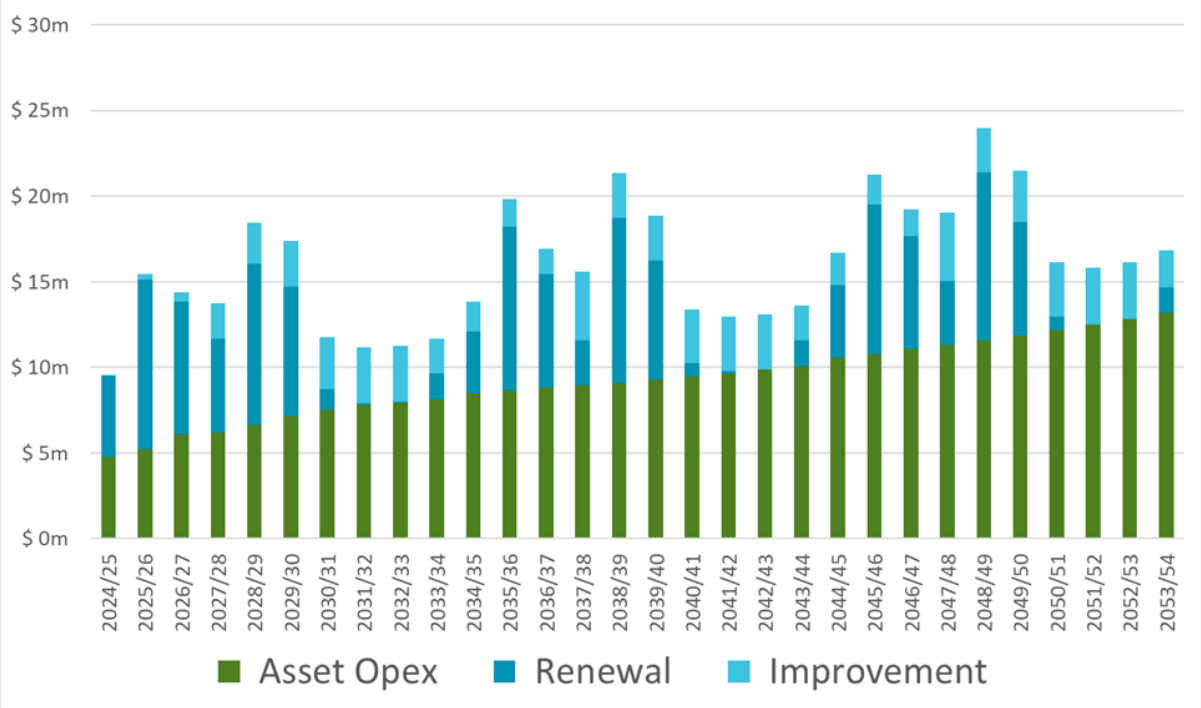


Figure 86: Opex and capex forecast

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