Greater Wellington Regional Council

Wellington Metropolitan Rail

2018/2019 Annual Report June 2019

Greater Wellington
Te Pane Matua Taiao

WELLINGTON REGION MAP

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New Bike and Ride shelter at Paraparaumu

CHAIRPERSON'S REPORT

This has been our busiest year yet on Greater Wellington's regional rail network with an all-time patronage high of 14.3 million passenger journeys, which is 800,000 more than the previous year. More and more people are hopping out of their cars and onto our rail services as means of travel to work, school and our region's great attractions. We have continued to invest in better infrastructure across the network and have been working to ensure frequent services across our busiest lines.

Growing public transport patronage

This new annual patronage high represents a 5.7 per cent increase year on year. Peak patronage was even higher, up 7.3 per cent year-to-date, and peak patronage on our two busiest lines, Hutt Valley and Kapiti, which carry around 85% of our customers, are up 8.5 per cent year-to-date. This patronage growth is significantly above forecast models and even above Greater Wellington's internal stretch targets. We also had the biggest ever Westpac Stadium event with Eminem's concert, which saw an extra 22,000 people travelling on the trains on March 2. Patronage exceeded 14m for the first time in 2018/19.

New timetable for Hutt and Kapiti Lines

In July there was a timetable change for the Hutt and Kapiti Lines, introducing a 20 minute frequency on interpeak services. The impact of the timetable meant more frequent services on the Kapiti and Hutt Valley lines between the two peaks and additional services in the evening as well as more accurate timing for services on the Johnsonville line.

Addressing driver shortages

There is still a shortage of drivers on our network – ten Locomotive Engineers (LEs) left Transdev over the year, nine of which went to other rail companies and one of which was promoted. Five LEs graduated this year and a total of 17 were in training throughout the year. Transdev are currently five LEs short of a full roster. Recruitment is ongoing. A state-of-the art train simulator has been used this year to help train new drivers. It was developed to give a real-life view of the region's rail tracks and enable trainee drivers to respond to different situations that can unfold – including earthquakes, storms and slips.

Improving the Wairarapa journey
Improving Wairarapa Line performance and comfort continues to be a priority and a challenge. Metlink commenced the Wairarapa nine-car service during afternoon peak, in April. The 4:25pm nine-car service to Masterton saw another carriage added to provide an additional 64 seats for the service. This is now the longest passenger train on the Wellington region's rail network by more than 20 metres.

Paraparaumu cycle racks
A brand new style of cycle racks was installed at Paraparaumu train station. The new racks are sheltered with two tiers, being able to hold 16 bikes. This is the space that two car parks would take up. The cycle rack in Paraparaumu acts as a trial for the rollout of new bike racks at other stations.

Porirua Station Park and Ride
Porirua Station Park and Ride has been extended with an additional 172 carparks to cater to the capacity of commuters using our network. This project was done in three stages, with the last stage being completed in July. As part of this upgrade, there are eight new carpool spaces – reserved for cars with two or more people. There are also five new mobility parking spaces, two new areas for motorcycle parking and two new parent parking spaces.

Major upgrade and renewal works
The ongoing Wellington metro upgrade project is working to combat the remaining concerns of train users. The project got underway in March and the next major works will be construction on the Trentham to Upper Hutt single line to double track that area. The next phase of major developments will likely focus on new train fleets and replacement of the aged and constrained network signalling infrastructure with a modern system offering safer operations and higher service frequencies. Preparation of an updated Wellington Regional Rail Plan is underway and we are to engage with stakeholders on strategic programme concepts from this September.

Looking ahead
Planning has commenced for proposed longer distance rolling stock (dual mode electro-diesel multiple units), to replace and upgrade the Wairarapa and Capital Connection fleets. These plans include the provision of capacity for supplementing peak demand on both the Hutt Valley and Kapiti Lines. Reliability and punctuality both improved in June compared to May 2019 with less services cancelled. Our operator is implementing a service improvement plan to ensure sustained performance against targets over time. Greater Wellington, Transdev Wellington and KiwiRail are awaiting the long term customer service goal of introducing electronic integrated ticketing across all train, bus and ferry services delivered by Project NEXT.

Chris Laidlaw

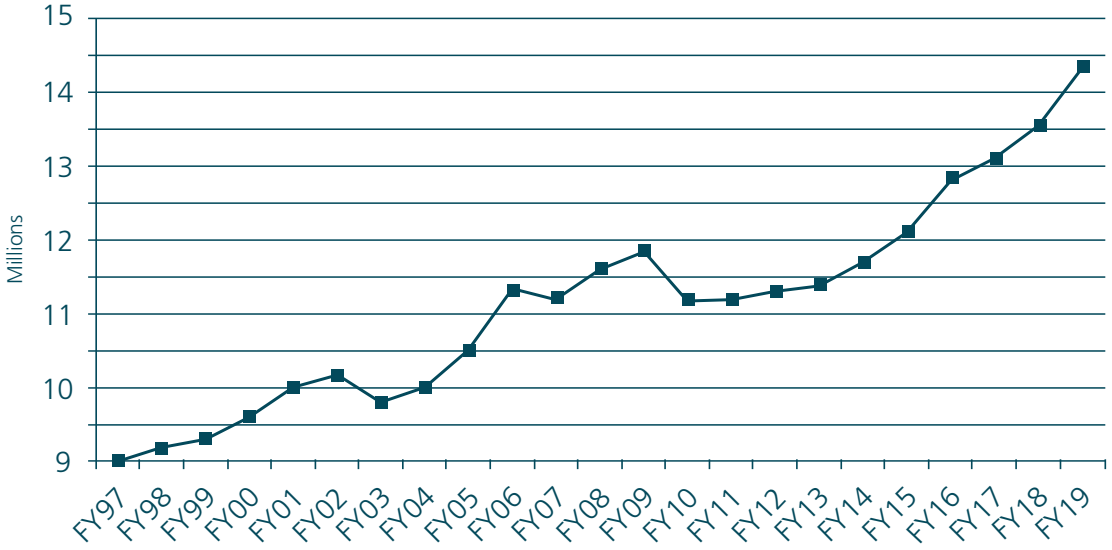
HIGHLIGHTS OVER THE YEAR

Biggest stadium event in Wellington (Eminem), an extra 22,000 people travelling on the train

New timetable for Hutt and Kapiti Lines - 20 minute off peak frequency

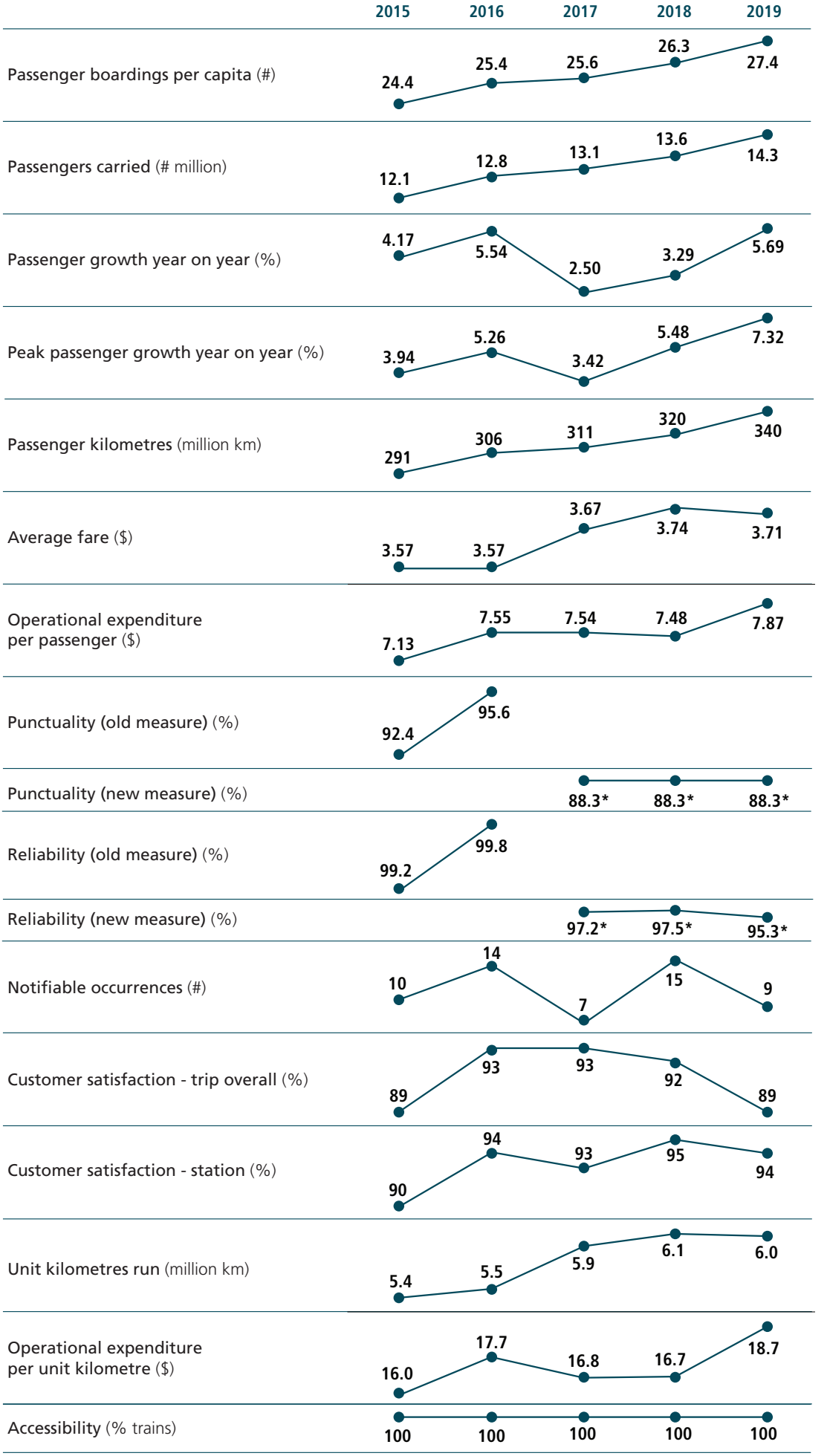
PATRONAGE GROWTH

Strong patronage growth, 5.7% overall and 8.5% peak growth on the Kapiti and Hutt Lines



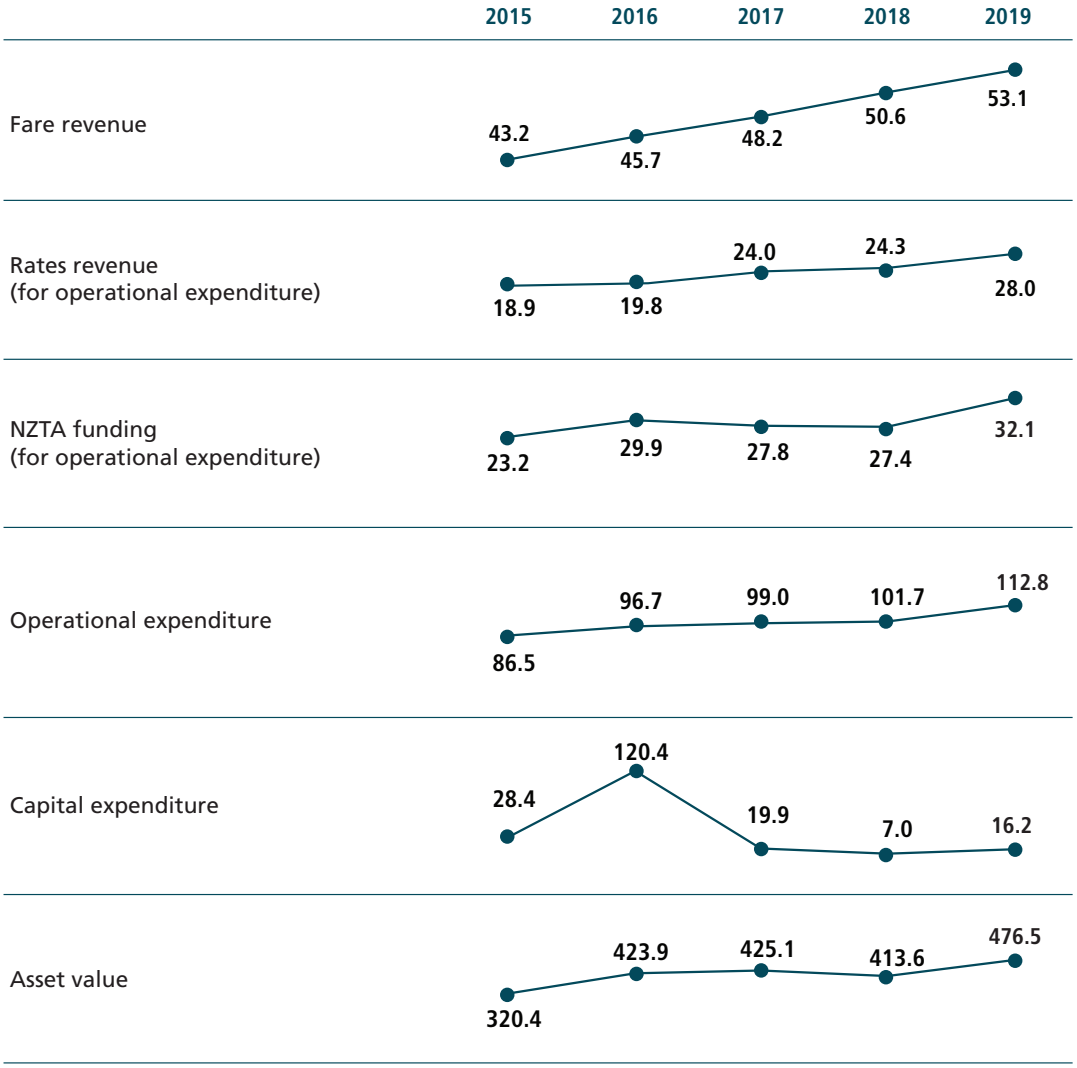
WELLINGTON METROPOLITAN RAIL

TRENDS



* Punctuality & reliability results for 2017 onwards are not comparable with previous years. 'Reliability' is now a measure of all services that are cancelled, do not stop at all stations, or leave early from key stations; prior to 2017 the measure was for cancelled services only. 'Punctuality' (on-time) results are now measured across the network (at all key stations); prior to this financial year the measure was recorded at Wellington station only.

FINANCIAL TRENDS ($ MILLION)



AVERAGE ASSET CONDITION (1 = EXCELLENT, 5 = EXTREMELY POOR)

STATIONS (SCORE)

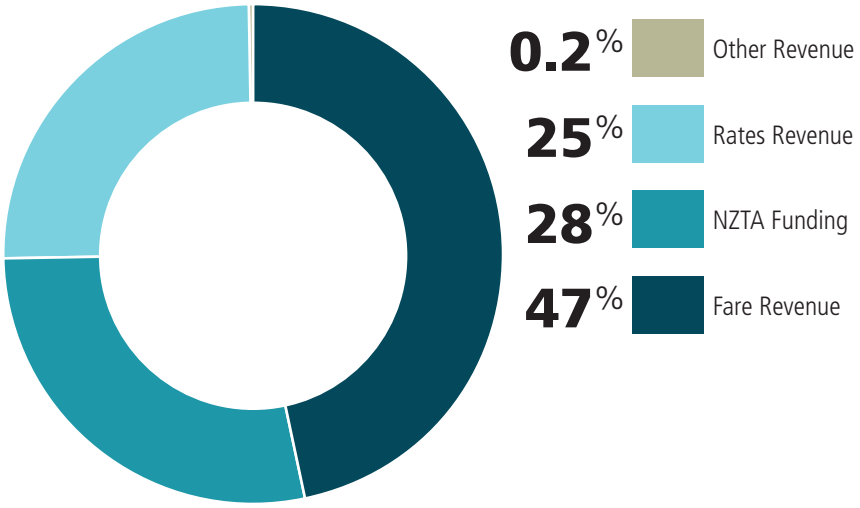
	2015	2016	2017	2018	2019
Johnsonville Line	**2.0**	**1.7**	**2.2**	**1.9**	**1.8**
Kapiti Line	**2.0**	**1.6**	**1.9**	**1.9**	**1.9**
Melling Line	**2.2**	**2.0**	**2.1**	**2.0**	**1.9**
Hutt Valley Line	**2.2**	**1.8**	**2.1**	**2.0**	**2.0**
Wairarapa Line	**2.1**	**1.9**	**2.0**	**2.0**	**1.9**

TRAINS (SCORE)

	2015	2016	2017	2018	2019
Matangi	**1.0**	**1.0**	**2.0**	**2.0**	**2.0**
SW Carriages	**2.2**	**2.2**	**3.0**	**2.9**	**2.9**

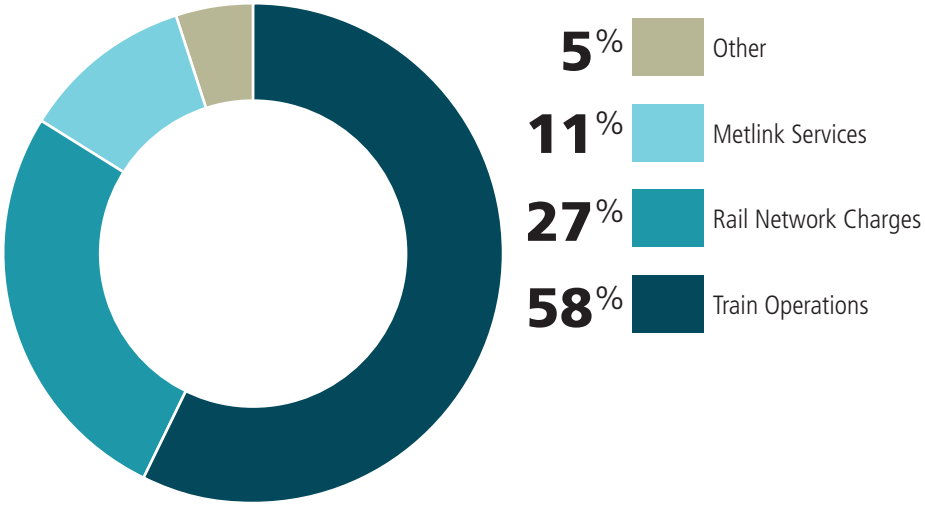
OPERATIONAL REVENUE 2018/19

$113,454,000



OPERATIONAL EXPENDITURE 2018/19

$112,770,000



Track work on the Kapiti Line


80CR-9

One two-car Matangi train unit can easily carry more than all the drivers and passengers in the cars shown in this picture.

1 INTRODUCTION

The Wellington region covers a land area of 813,000 hectares and is home to a population of 515,200[1]. The region encompasses the cities of Wellington, Porirua, Upper Hutt and Lower Hutt, and the Kapiti, South Wairarapa, Carterton and Masterton districts. Greater Wellington Regional Council (GWRC) has responsibility for the provision of public transport throughout the region.

Wellington is fortunate in being one of two New Zealand regions that has a rail service as part of its public transport network. Over 14.3 million passenger journeys are undertaken on the rail network each year. The average trip length is three times greater than that of bus, as rail is the predominant mode for longer distance public transport within the Wellington region. Wellington's metro rail plays a vital role in connecting the region. In enabling the efficient transportation of people it makes a very significant contribution to the region's economic and social well-being.

During 2018/19 nearly 4.5 million passengers travelled into Wellington during the morning peak, that's around 20,000 per day in each direction. In total Rail commuters make up about 40% of people travelling from the north into the Wellington CBD.As in most parts of the world, fare revenue does not fully cover the cost of providing Wellington's metro rail. The cost of subsidising the rail service is shared by GWRC and the New Zealand Transport Agency (NZTA). GWRC and NZTA share a strong interest in securing best value for their expenditure on rail subsidies.

GWRC's role in the region's metro rail service has grown rapidly in recent years. Up until the late 2000's, Wellington's rail services were delivered by TranzRail which owned all of the rolling stock and had exclusive rights to track access. At that time GWRC was a relatively passive funder, with little capacity to influence the quality or efficiency of the region's rail service.

GWRC's role began to change when in 2007 it signed a contract to purchase 48 new two-car Matangi Electric Multiple Units (EMUs) from Hyundai Rotem. Further changes followed the Crown's purchase of the rail business and assets of Toll New Zealand Limited in mid-2008, and the release of the Government's 'Metro Rail Operating Model' in 2010.

In 2011 a significant step toward the implementation of the Model was achieved when GWRC, with strong Government support, acquired ownership and control of the rolling stock and most of the stations and related assets used for metro rail services.

The Wellington Network Agreement is a 85 year agreement signed in 2013 and secures access rights to the region's rail network for GWRC's chosen metro services operator. The Agreement also covers maintenance, train control and network renewals and gives GWRC greater say in the management of the asset.

A new performance based contract commenced on the 3rd July 2016, with Transdev Wellington now operating passenger services and maintaining the Matangi fleet.

The upgrades to station buildings, pedestrian bridges and Park & Ride facilities continue, while working closely with the relevant councils and community parties.

The Public Transport Satisfaction Monitor report showed 89% of recent users were either satisfied or very satisfied with the metro rail service they were travelling on. The report also showed that 79% of passengers were pleased with the frequency of the service, 72% were happy with the on-time performance of the train service, while 71% felt that there were enough seats available.

Tawa Station

2 PURPOSE

This report provides an overview of the performance of metro rail in Wellington in the financial year 1 July 2018 to 30 June 2019, referred to from here on as 2018/19.

Rolling stock and station assets are central to the performance of the metro rail service and hence their on-going management is also a key focus of this report.

The report is intended to give a transparent account of:

- how the service performed
- what it cost to provide the service
- how it was paid for in 2018/19
- the actions that have and are being taken to maintain and improve the service
- rolling stock and station asset management.

This is GWRC's eighth annual report on the performance of metro rail and consequently the performance trends presented in this report are based on a further year of accumulated performance data.

Our services are measured as unreliable if:

- they leave the first station or any intermediate stations more than 30 seconds early
- it has not stopped at a station
- it has been run with less than the expected number of units

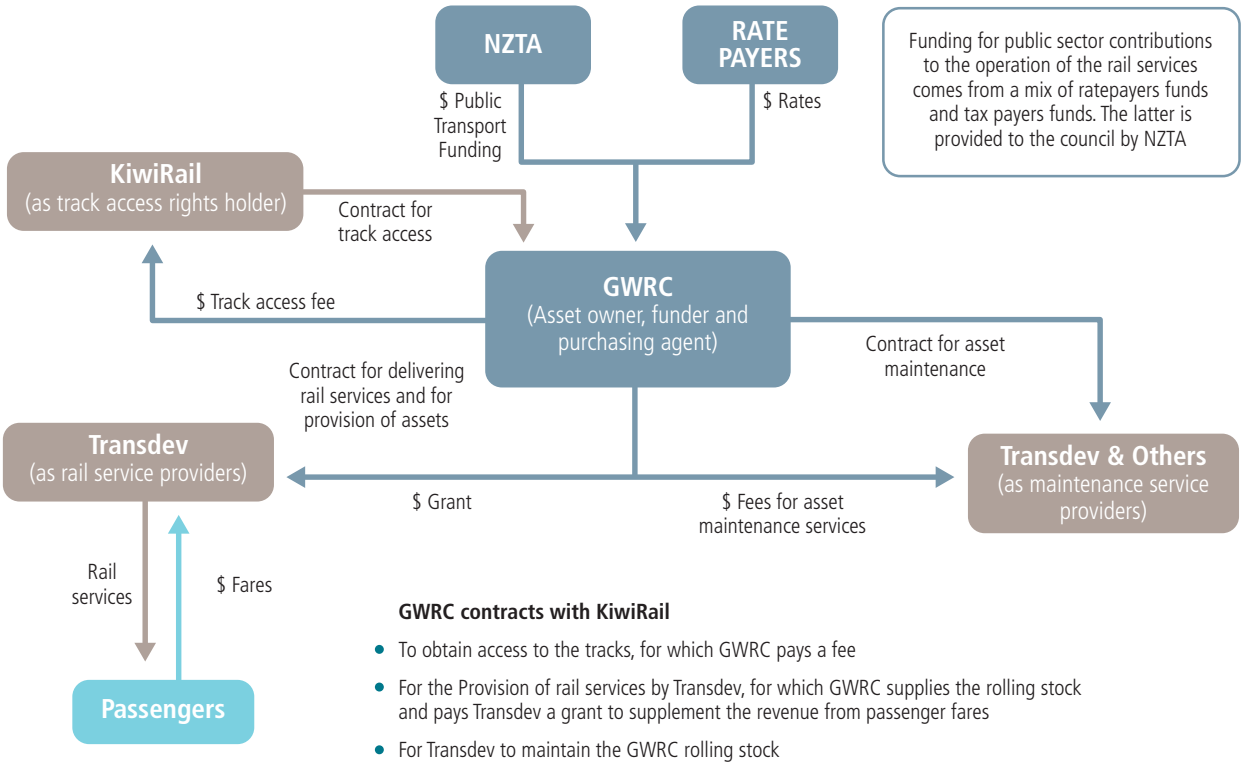
Our services are measured as punctual if they arrive at any intermediate station or its destination within five minutes of the scheduled time.

Our reporting of performance trends will become increasingly useful in future years as even more data accumulates.

Works at Cashmere Avenue level crossing

3 BACKGROUND

The diagram below summarises how the metro rail system in Wellington is organised.

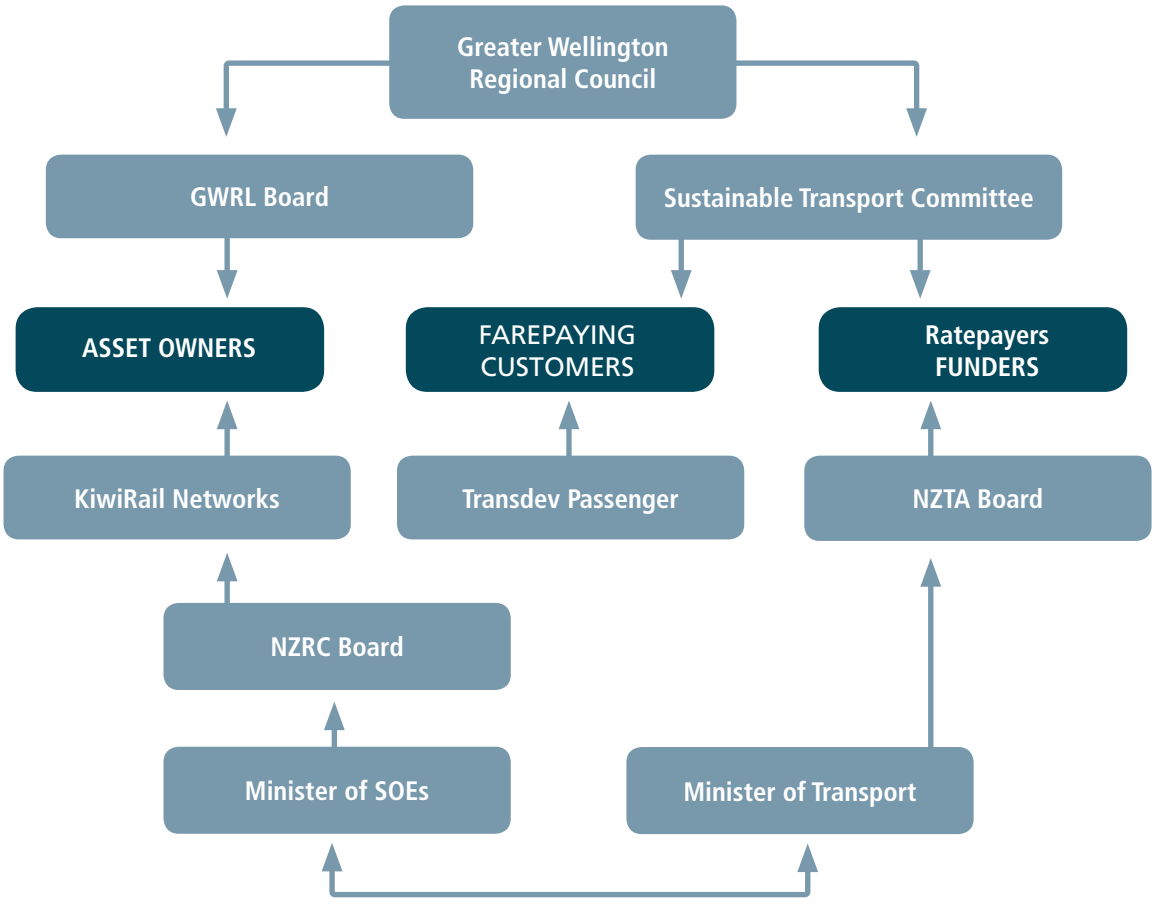


GWRC contracts with KiwiRail

- To obtain access to the tracks, for which GWRC pays a fee
- For the Provision of rail services by Transdev, for which GWRC supplies the rolling stock and pays Transdev a grant to supplement the revenue from passenger fares
- For Transdev to maintain the GWRC rolling stock

GOVERNANCE

Governance is essential to protect the interests of stakeholders. The major stakeholders in metro rail are its asset owners, customers and funders. The governance structures that serve the interests of these various stakeholders are shown below.



WELLINGTON METROPOLITAN RAIL NETWORK

The Wellington metro rail network comprises four lines: Johnsonville, Kapiti, Hutt and Wairarapa. The Hutt line includes a short branch to Melling, and Wairarapa and Hutt services share common track through to Upper Hutt. All lines terminate at Wellington Railway station.

The Wellington network includes the track, tunnels, bridges, signals and overhead electric traction, and is part of the national rail network owned by KiwiRail. With the exception of the Johnsonville line and services to Melling, metro rail services share the network with KiwiRail's long distance freight services.

ACCESS TO THE NETWORK

The provision of the Wellington's passenger rail service relies on GWRC holding a right of access to the rail network.

GWRC's rights to provide the metro rail service on KiwiRail's Wellington network are set out in the Wellington Network Agreement, signed with KiwiRail Holdings Limited in June 2013 for a term of 85 years. This term provides GWRC with the security that is necessary to continue making substantial capital investments in rolling stock and land based rail assets and provides GWRC with access rights that are sufficient to meet the foreseeable increase in demand for Wellington metro rail services. GWRC's 85 year term is the same as agreed between Auckland Transport and KiwiRail.

The Agreement defines access rights by reference to the geographic area covered by the Wellington metro rail services, the number of train services that GWRC may operate on the Wellington Network, and the priority given to passenger rail services in relation to other services that also use the Wellington Network. Other users include KiwiRail's freight service, and scheduled long distance passenger services, and charter and heritage operators.

OPERATIONAL AGREEMENTS

Government does not require KiwiRail Holdings Limited to obtain a return on the capital invested in the rail network and consequently GWRC does not pay an access fee per se. However GWRC purchases a range of essential network services that include:

- Network Management. Comprising the development and implementation of a triennial Network Management Plan, the coordination of network service delivery, and reporting to GWRC and the Metro Service Operator (MSO)
- Network Control. Comprising train control, traction control, access control and supporting the delivery of GWRC's RTI system for rail
- Maintenance. Comprising planned and unplanned maintenance of track, platforms, signals, telecommunication, electrical systems, bridges tunnels, protective walls and the overhead traction electricity system
- Incident Response. Returning the Wellington metro network to service after an incident as quickly and safely as possible.

GWRC is the biggest user of the Wellington metro rail network and consequently GWRC carries the largest share of the cost of that network.

PERFORMANCE MANAGEMENT

Across these operational services the Agreement includes a set of 14 Performance Indicators (PIs) and performance targets, along with an obligation on KiwiRail to measure its actual performance at regular intervals.

The Agreement has seven outcome-focussed Key Performance Indicators (KPIs), and eight Asset Quality Measures that measure long term trends in the quality of the various network assets on which Wellington's passenger rail service depends.

The Agreement requires KiwiRail to report its performance against all PIs, KPIs and Asset Quality Measures within a regime of monthly and annual reports. This reporting regime will provide GWRC and the MSO with a comprehensive insight into KiwiRail's management of the Wellington metro network as it affects the performance of Wellington's passenger rail service.

The Agreement includes a performance incentive regime under which actual performance against KPIs is associated with a scale of performance payments or rebates.

NETWORK MANAGEMENT PLAN

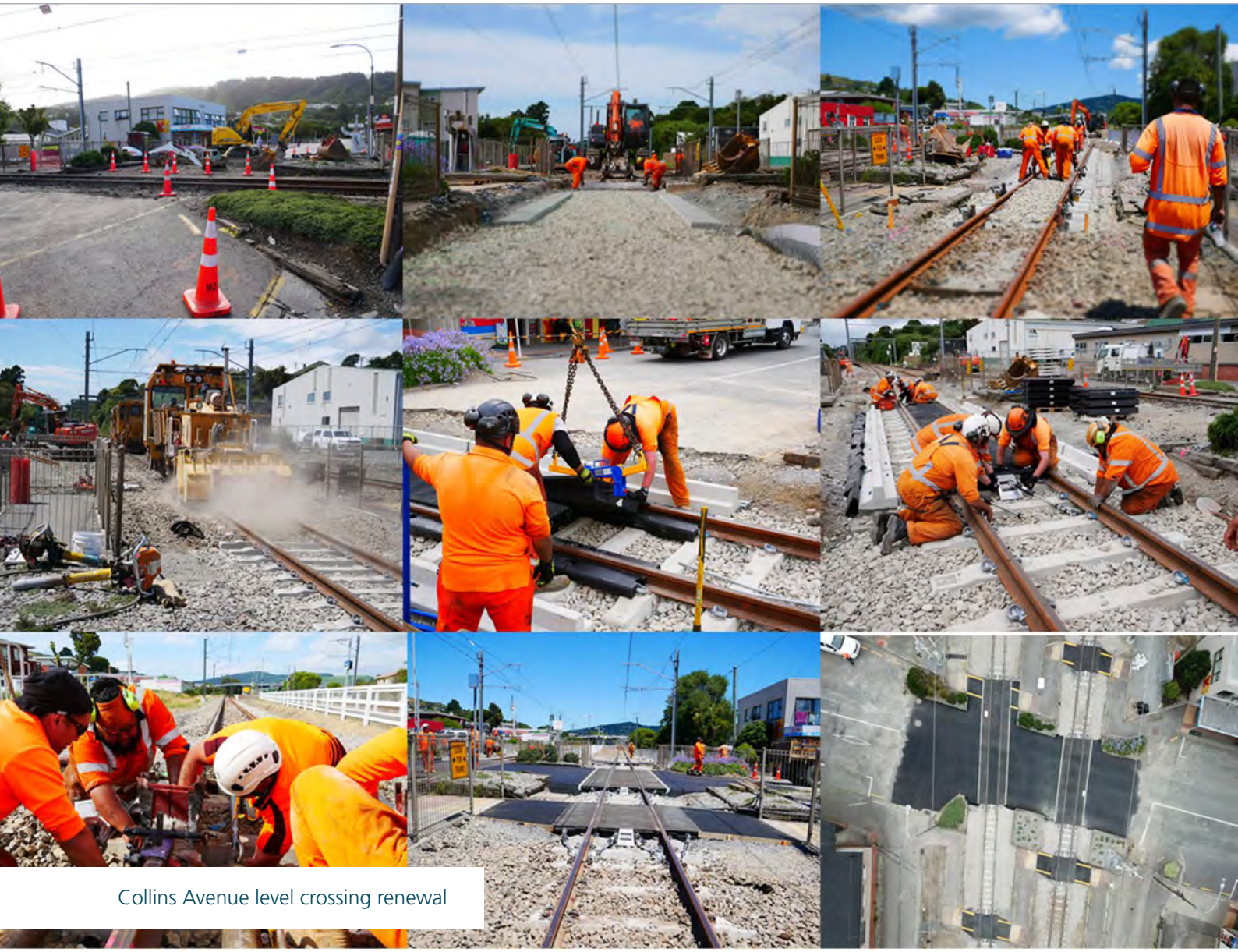
The Agreement provides GWRC and the MSO with the capacity to strongly influence the long term management of the Wellington metro network through the requirement for KiwiRail to obtain GWRC's consent to a comprehensive Network Management Plan.

The Network Management Plan will be produced on a triennial basis, and cover a 10 year time horizon with detailed information for the triennium and an outline for the following seven years. The current triennium runs from 2018-2021.

Key components of the Network Management Plan are:

- A current assessment of the condition of the various assets making up the Wellington metro network
- An assessment of current and expected utilisation of the Wellington metro network by the MSO, KiwiRail's freight service and any other operators
- KiwiRail's philosophy and strategic plan for the management of the Wellington metro network
- KiwiRail's planned programme of maintenance and renewals work over the triennium and the associated GWRC budget
- The expected implications of the funding available from GWRC and all other sources on the condition of the Wellington metro network over the triennium (with the expectation that the available funding should be sufficient to enable the network condition to be maintained or improved).

Upper Hutt Station



Collins Avenue level crossing renewal

4 SERVICE OUTCOMES

4.1 OVERVIEW

GWRC uses five measures to monitor the performance of metro rail:

- **Punctuality.** Are trains running to scheduled times? Punctuality is an important driver of patronage and customer satisfaction. In Wellington a service is on time if it arrives at its destination and each 'intermediate station' within 5 minutes of the scheduled time. Intermediate stations are key stations across the Wellington network: Porirua Stations on the Kapiti Line; Waterloo Station on the Hutt Valley Line; and Featherston, Upper Hutt and Waterloo Stations on the Wairarapa Line.
- **Reliability.** Are the contracted services being delivered? Reliability is measured as the percentage of timetabled services that are actually delivered. Any service that is canceled, that has left early from its origin or at an intermediate station, or that has not stopped at all stations which it is scheduled to stop at, and any service that is run with the lower than the expected number of train units is measured as unreliable.
- **Safety.** Safety is a critical driver of public confidence in the service and therefore patronage.
- **Customer Satisfaction.** Improving all aspects of customer satisfaction is an important goal for GWRC. Customer satisfaction is an important driver of increasing patronage.
- **Patronage.** How many people are using the metro rail service and what is the average length of their journey? Achievement of GWRC's longer term transport goals depends in part on growing rail patronage over time to reduce motor vehicle use and so reduce carbon emissions and road traffic congestion.

4.2 ACHIEVEMENTS

Overall performance against the service outcome measures in 2018/19 is as follows:

Punctuality	88.3% As the measurement of this performance indicator has changed the current year results are not comparable to the years before 2016/17. Using the old measurement (services arriving and departing Wellington station within five minutes of the scheduled time) overall punctuality was 95.7%
Reliability	95.3% As the measurement of this performance indicator has changed the current year results are not comparable to the years before 2016/17. Using the old measurement (only cancelled services) overall reliability was 99.8% 'Reliability' is now a measure of all services that are not canceled, stop at all stations, do not leave early from key stations and run with the expected capacity; prior to 2016/17 the measure was for cancelled services only.
Safety	There were 9 events that were classified as Notifiable Occurrences (compared to 15 last year).
Patronage	Increased by 5.7% to 14.3 million in 2018/19. There has been a year on year increase since 2009/10.

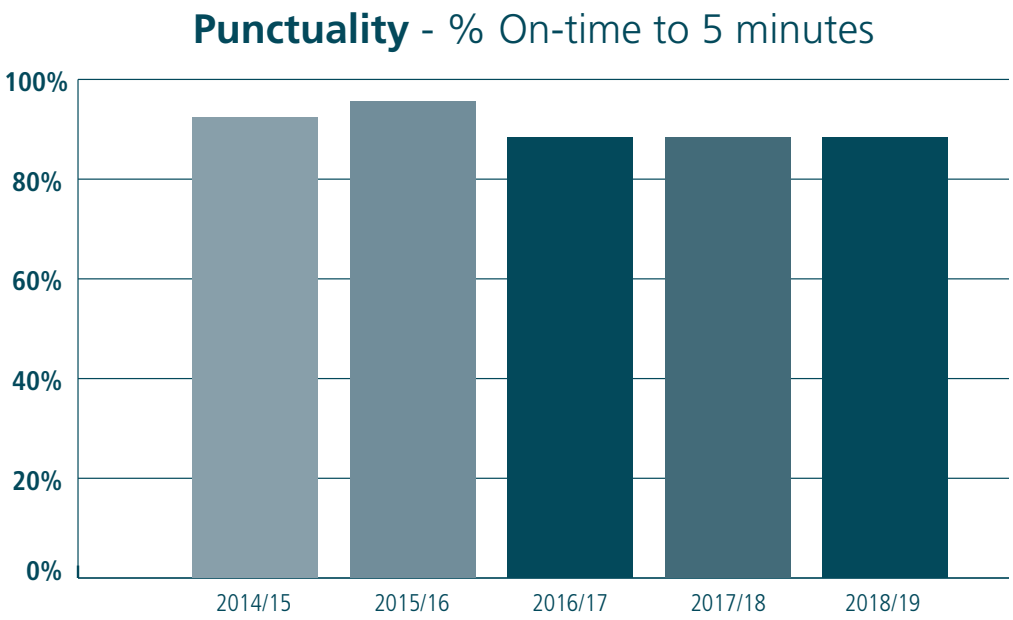
Further insight into each of these services outcome measures is provided below.

4.3 PERFORMANCE MEASUREMENT

PUNCTUALITY

Results since 2016/17 are not comparable to previous years' results.

'Punctuality' (on-time) results are now measured across the network (at all key stations); prior to this financial year this measurement was recorded at Wellington station only.



Using the old measurement (services arriving and departing Wellington station within five minutes of the scheduled time) overall punctuality was 95.7% for 2018/19, the best performing year as a whole.

Punctuality by line in 2018/19 is shown in the table below:

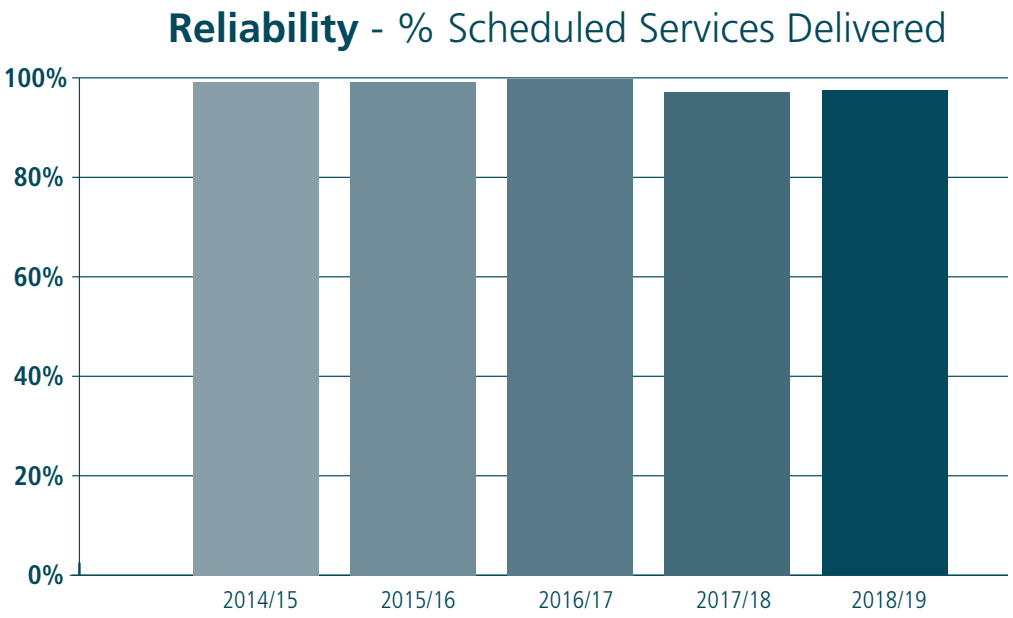
Line	Punctuality
Hutt Valley (incl Melling)	88.4%
Kapiti	83.3%
Johnsonville	97.3%
Wairarapa	57.2%

On-time performance on the Network was severely affected by a number of line shutdowns during the summer. The Wairarapa Line has seen high levels of network speed restrictions, which has significantly affected punctuality. Funding support is being sought to address the network issues on the Wairarapa Line. Services were also affected by a number of mechanical issues and staff shortages which had an impact on the punctuality results.

RELIABILITY

Results since 2016/17 are not comparable to previous years' results.

As previously mentioned, any service that is canceled, that has left early from its origin or at an intermediate station, or that has not stopped at all stations which it is scheduled to stop at, and any service that is run with the lower than the expected number of train units is measured as unreliable. Prior to 2016/17 a service was unreliable only if it had been cancelled, using the old measure that result would have been 99.8%.



SAFETY

Wellington's metro rail service remains relatively safe when compared to other transport modes in New Zealand and rail services in other countries. Management of operational safety on the Wellington rail network is described by a defined framework. The legislative framework for operating rail vehicles and providing the rail network is provided in the Railways Act 2005 (the Act), which is administered by the New Zealand Transport Agency (NZTA - the Rail Regulator).

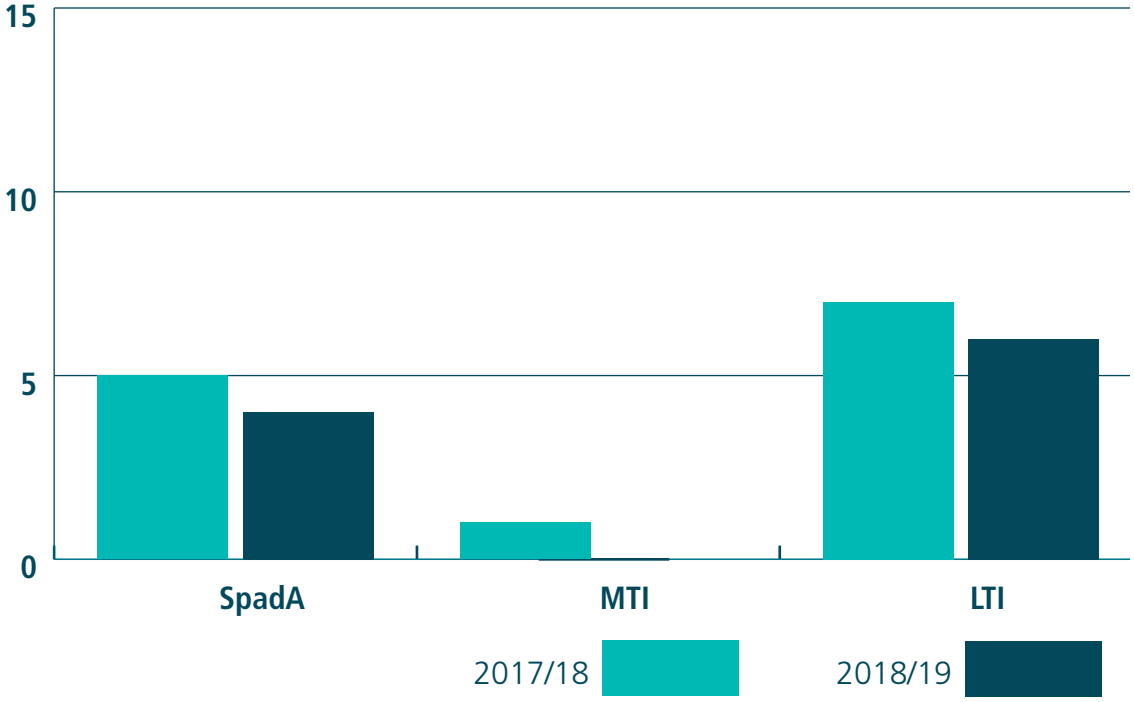
The Act requires that the providers of rail networks (Access Providers) and rail vehicle operators (Operators) must hold a Rail License. In order to obtain a Rail License, access providers and operators must provide the Rail Regulator with a Safety Case describing how safe operations will be managed. The NZTA reviews the Safety Case and will issue a Rail License provided the Safety Case meets the requirements of the Act.

In the Wellington region, KiwiRail holds a Rail License as the rail access provider, and Transdev as the operator of the passenger trains under a contract with GWRC.

The NZTA conducts an annual safety assessment of KiwiRail's and Transdev's safety cases.

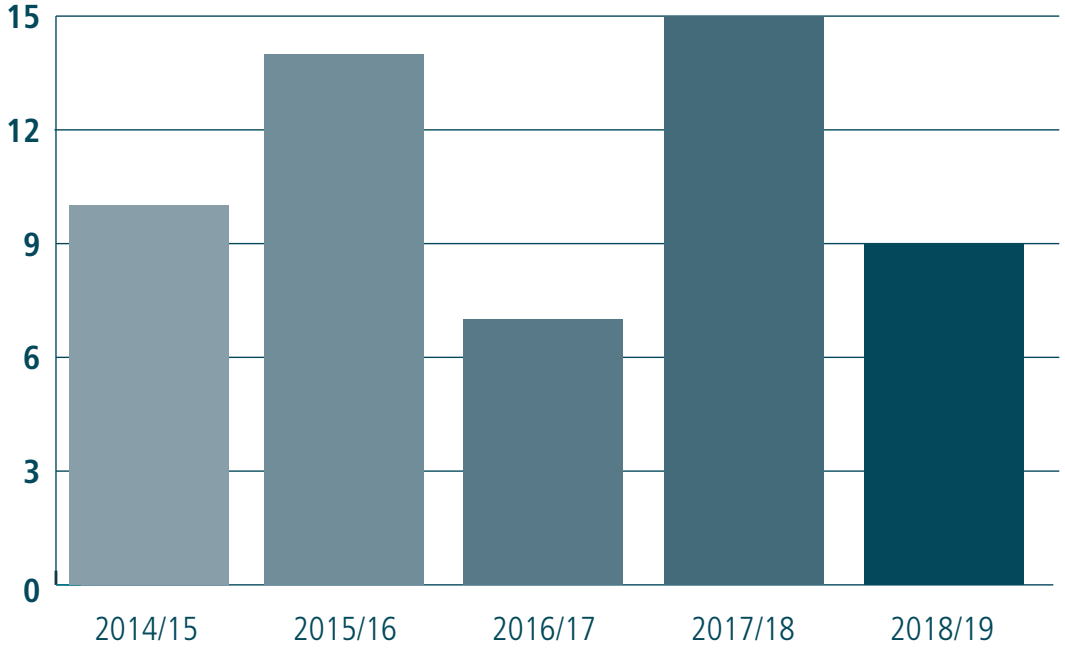
Major operating incidents are investigated by the Transport Accident Investigation Commission (TAIC). Recommendations from such investigations are made to the NZTA who, although not bound by the recommendations, are responsible for their implementation.

Safety - Occurrences



There were nine Notifiable Occurrences in 2018/19, compared to 15 last year.

Safety - Notifiable Occurrences



Another measure of safety is the annual transport customer survey which asks customers whether they felt safe on the trip they were travelling on. 95% of passengers on trains said they were satisfied with their personal security on the train (down from 97% last year) and 91% were satisfied with their security on the station they travelled from (down from 93% last year).

CUSTOMER SATISFACTION

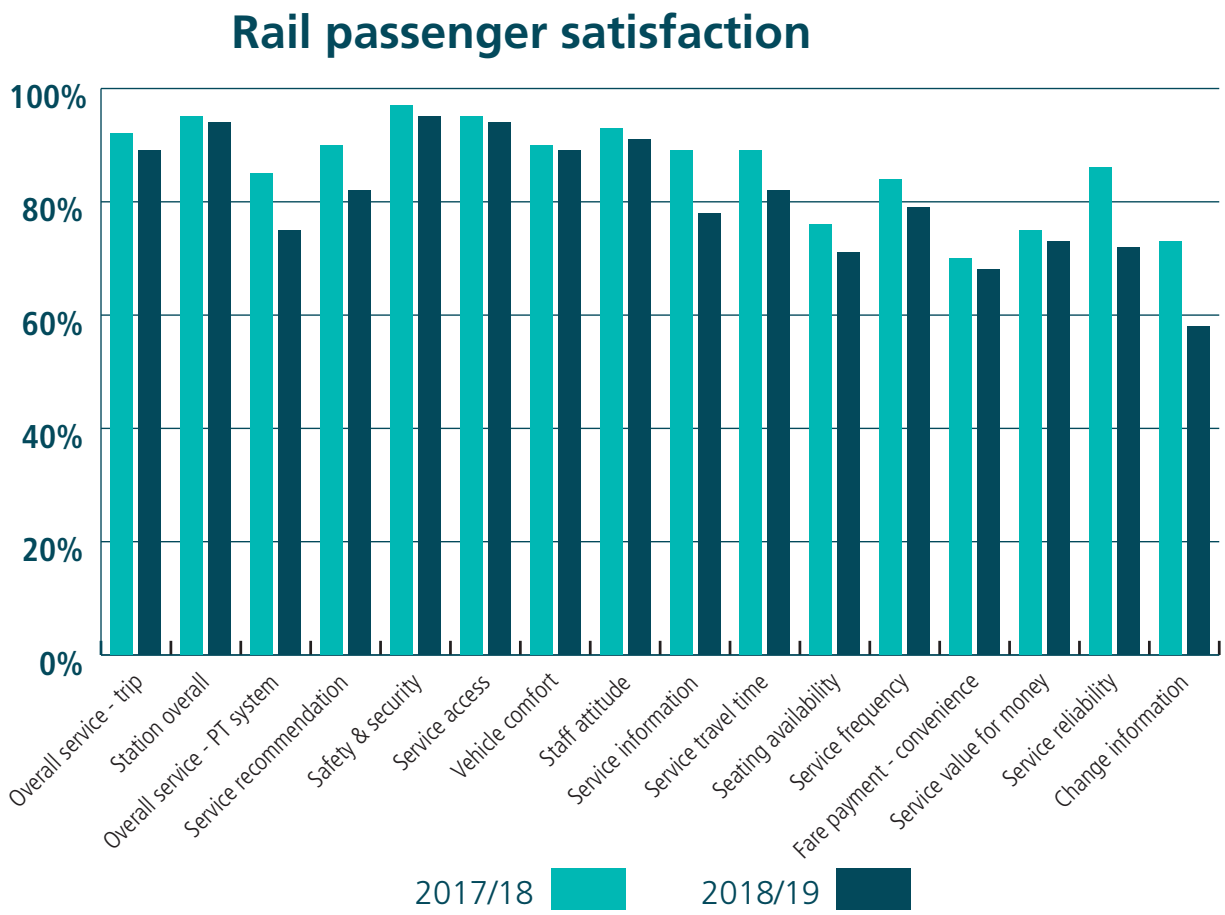
GWRC's principal tool for measuring customer satisfaction is an annual independent survey. The most recent one was undertaken in May 2019. The questionnaire content was based on the list of common questions designed by NZTA. Participants were surveyed on 182 public transport services. Questionnaires were distributed to every passenger aged 15 years or older on randomly selected bus and ferry services and to every second passenger aged 15 years or older on train trips. The response rate was 61% for all services combined. There were 4,042 participants in the 2019 survey.

Participants were asked a range of questions about their views and use of public transport generally and about the specific modes. They were also asked about the support systems, e.g. accessing information about public transport services.

Key findings of the survey, for rail passengers only, were:

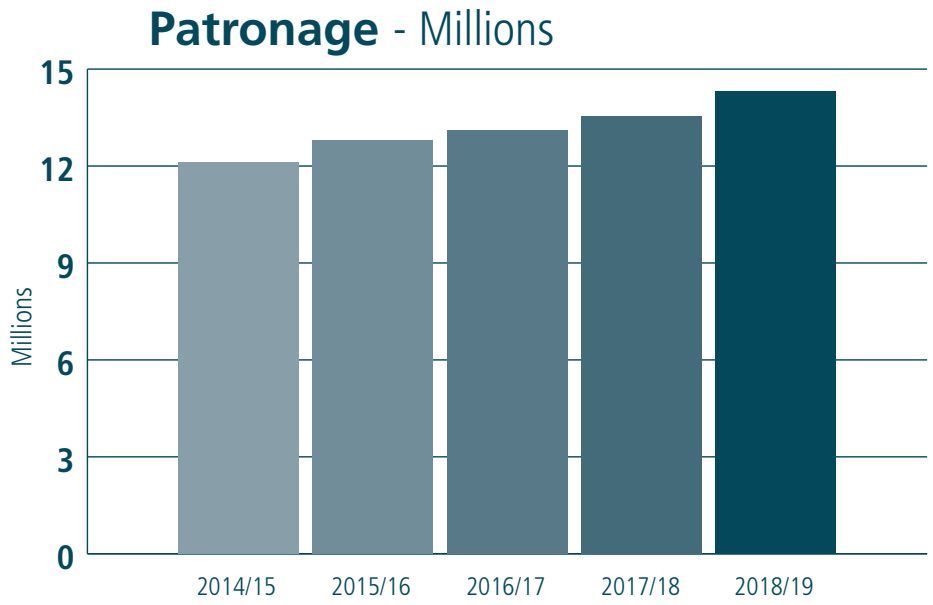
- 89% of recent users were either satisfied or very satisfied with the metro rail service they were travelling on, down 3% on 2017/18
- 95% of passengers were satisfied or very satisfied with their personal security on the trip they were travelling on while surveyed and 91% were satisfied or very satisfied with the helpfulness of the on-board staff. This compares to 97% and 94% respectively in 2017/18
- 82% were satisfied with the travel time and 72% of passengers were satisfied with service reliability (service being on time). The results for 2017/18 were 89% and 86%.

The graph below shows the percentage of rail passengers satisfied with specific features of the metro rail service and the public transport service overall compared to 2017/18 results.



PATRONAGE

Metro rail patronage for 2018/19 showed an increase of 5.7% over the previous year.

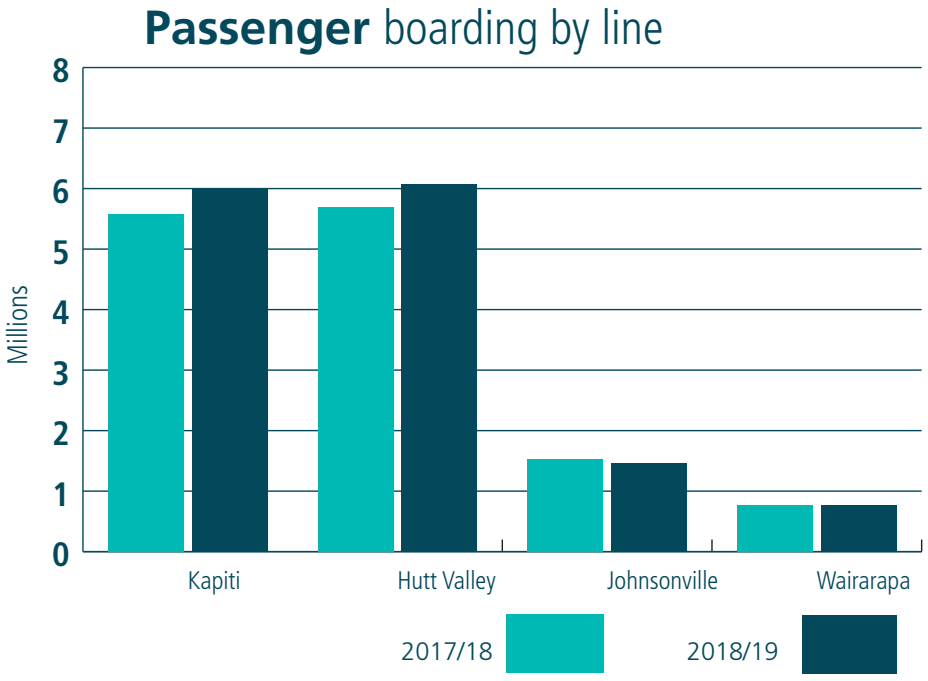


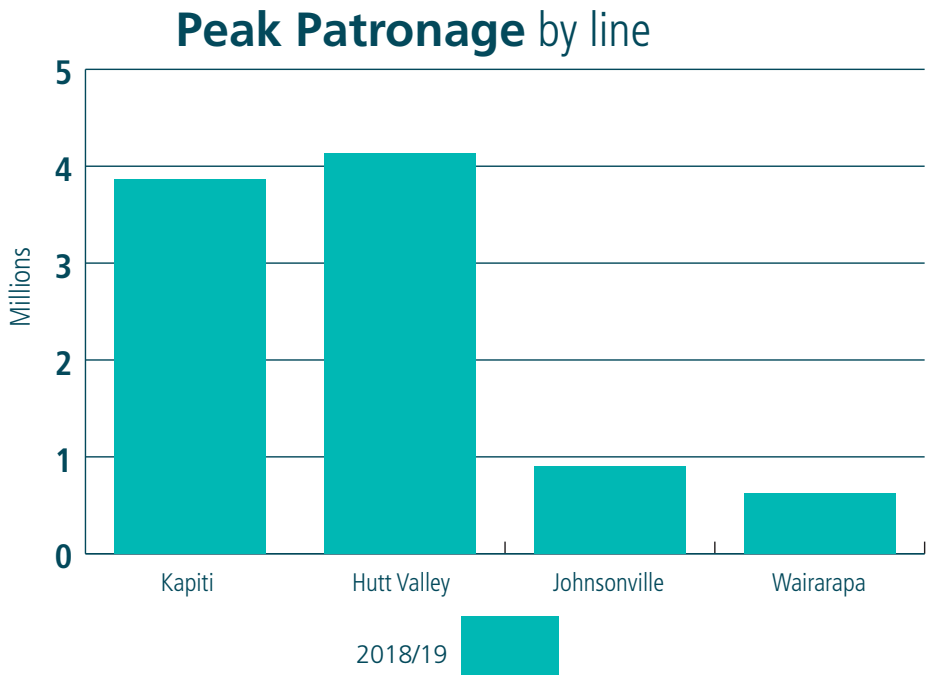
Factors that contributed towards patronage growth include:

- Network improvements made under WRRP together with on-going renewals
- Population growth north of Wellington, contributing to increased road congestion on both state highway 1 and 2
- Introduction of the Matangi 1 and Matangi 2 fleets, and the retirement of old rolling stock, which has improved overall passenger amenities and rolling stock reliability.

Factors that may have constrained patronage growth include:

- Substitution of buses for train services during 'blocks-of-line'
- A number of services running with reduced capacity.

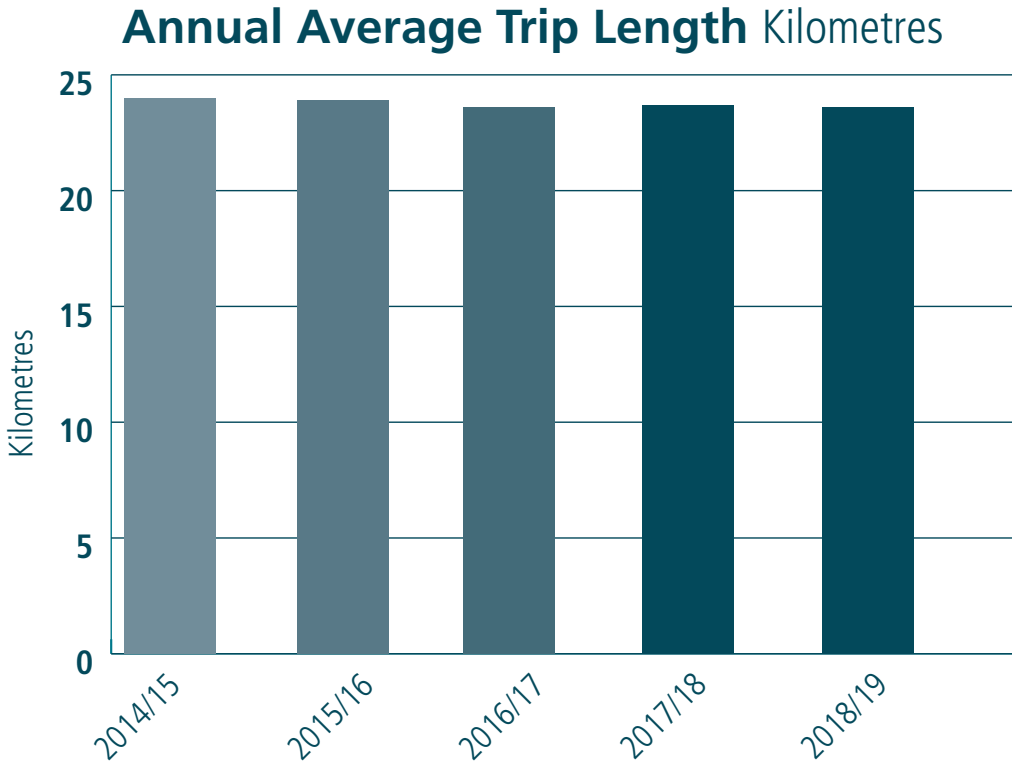




Changes in total patronage varied between lines, as seen in the graph above. Patronage increases compared to the same period in the previous year were: Kapiti +7.7%, Hutt Valley +6.8%, Johnsonville -4.0% and Wairarapa +1.9%.

The Kapiti and Hutt Valley Lines (which carry about 85% of customers between them) has seen peak growth of nearly 10%. The Wellington Regional Land Transport Strategy 2010–40 states that the appropriate role for passenger rail is the safe and efficient movement of many people at a time, primarily over medium to long distances. It has a key role in providing for access between regional centres and for commuter trips to and from the Wellington CBD.

The graph below shows annual average trip length over the past 5 years. For 2018/19 the average trip length was 24 km. By way of comparison, the average trip length for bus journeys is 7 km.



4.4 OUTLOOK FOR 2019/20

Improvements in the key service outcomes are expected to continue as GWRC, Transdev and KiwiRail work together. We anticipate 2019/20 to be another busy year with significant activity to include:

- A continued improvement in reliability, punctuality and customer satisfaction, through implementation of continuous service and performance improvements in partnership with Transdev and KiwiRail
- Improve driver training quality and safety through the delivery of a Matangi Driving Simulator
- Full introduction of passenger information points at every station
- Full introduction of a new passenger PA and information system at Wellington station
- Continuation of the Wellington Metro Upgrade Project, including double tracking between Trentham and Upper Hutt
- Safety events are relatively infrequent. The recent substantial investments in network upgrades and new rolling stock together with KiwiRail's and Transdev's focus on all aspects of rail safety should ensure that the regional rail service remains safe for customers and staff.

5 ASSET MANAGEMENT: ROLLING STOCK

5.1 OVERVIEW

The rolling stock assets are largely in a steady state business as usual status, with the entire Matangi fleet in operation, and the Matangi heavy maintenance program commencing. We have been working with our Operator and Maintenance Partners to resolve ongoing contractual non-compliance and overall asset condition and performance.

The Wairarapa carriage fleet is approaching the need for refurbishment. So strategic planning is underway to determine the best approach for these assets.

Below is a breakdown of the current rolling stock assets:

Type	Quantity	Design Life	Comment
Matangi EMUs	48	2040	All 48 units are in operational service.
Matangi 2 EMUs	35	2045	All 35 are in operational services
Matangi Driving Simulator	1	2045	Operational Training Tool
SW Carriages	18	2032	Currently operating on the Wairarapa line.
SE Carriages	6	2018 (re life required)	Currently operating on the Wairarapa line.
AG Van	1	2032	Supports the SW and SE carriages on the Wairarapa line.
Shunt Crabs	2	2048	Accepted, but pending decision by Operator, on the operating model

Ownership of these assets carries significant responsibility for their management which includes funding their maintenance, refurbishment, disposal, and replacement with support from Government.

GWRC's Public Transport Asset Management Plan, which covers rolling stock, was adopted on 30 June 2018. The Asset Management Plan articulates the required level of investment over the next 30 years, and is a living document.

5.2 ACHIEVEMENTS

- Matangi driving simulator fully accepted and becoming an active tool for day to day training.
- Continuation of Matangi heavy maintenance program

Matangi receiving scheduled maintenance

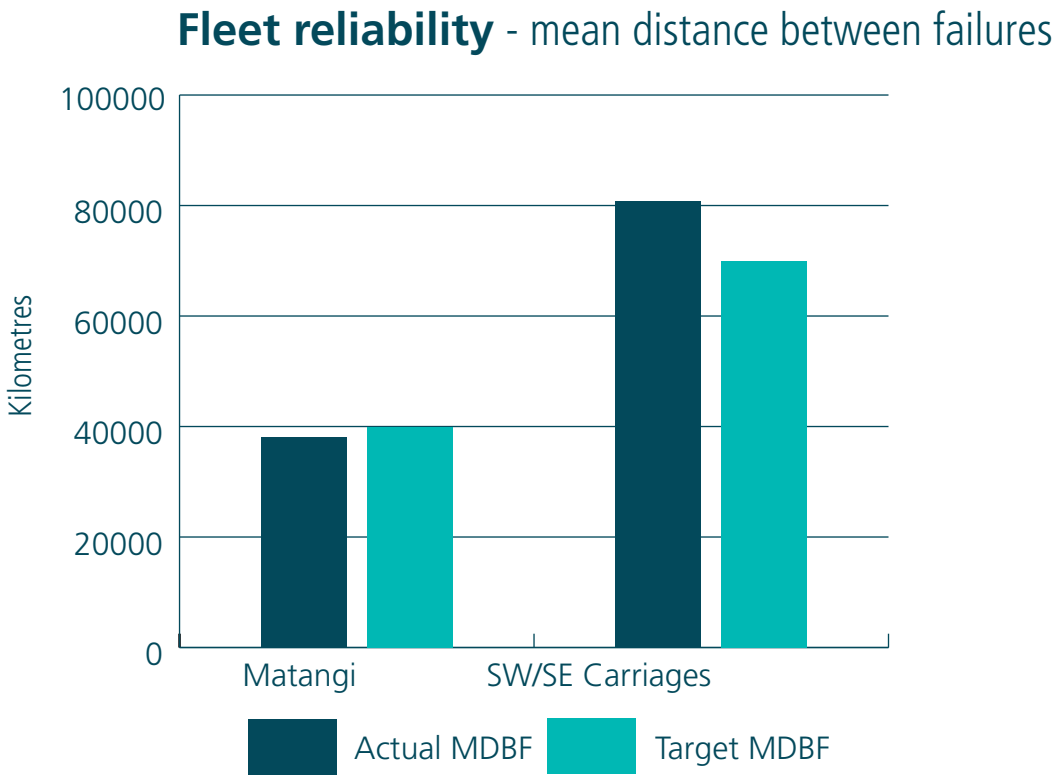
5.3 PERFORMANCE MEASUREMENT

GWRC uses four measures to monitor the performance of its rolling stock:

- **Fleet Reliability.** The number of kilometres per service fault (Mean Distance Between Failures (MDBF)). This is a measure of fleet failures outside of the planned maintenance schedules. The higher the distance the more reliable the fleet
- **Fleet Availability.** The number of sets available for service. This is a measure of the fleet availability required to deliver the scheduled services on a daily basis, averaged out each month over the course of the reporting period
- **Maintainability.** Implementation of the maintenance schedules. The maintenance schedules should deliver the required levels of reliability and availability. Although a product of the design of the train, maintenance schedules should be reviewed for continuous improvement and better efficiencies
- **Safety.** Ensuring GWRC contractual arrangements do not lead to injury. This is a measure of the safety practices of the MSO, the maintainer and the network provider.

FLEET RELIABILITY

The following graph presents the GWRC EMU fleet Mean Distance Between Failure (MDBF) performances compared with the target over the previous 12 months.



The MDBF presented above is derived from total kilometers run by each fleet versus the total service cancellations and service delays of 5 minutes or greater attributed to a GWRL rolling stock asset failure. Note the carriage fleet statistic does not take into account KiwiRail locomotive failures.

The carriage fleet reliability for the year met the targets required. Unfortunately the Matangi fleet has not quite met the target. Extensive work has been on going with our operational and maintenance partners to further improve the fleet reliability and performance.

FLEET AVAILABILITY

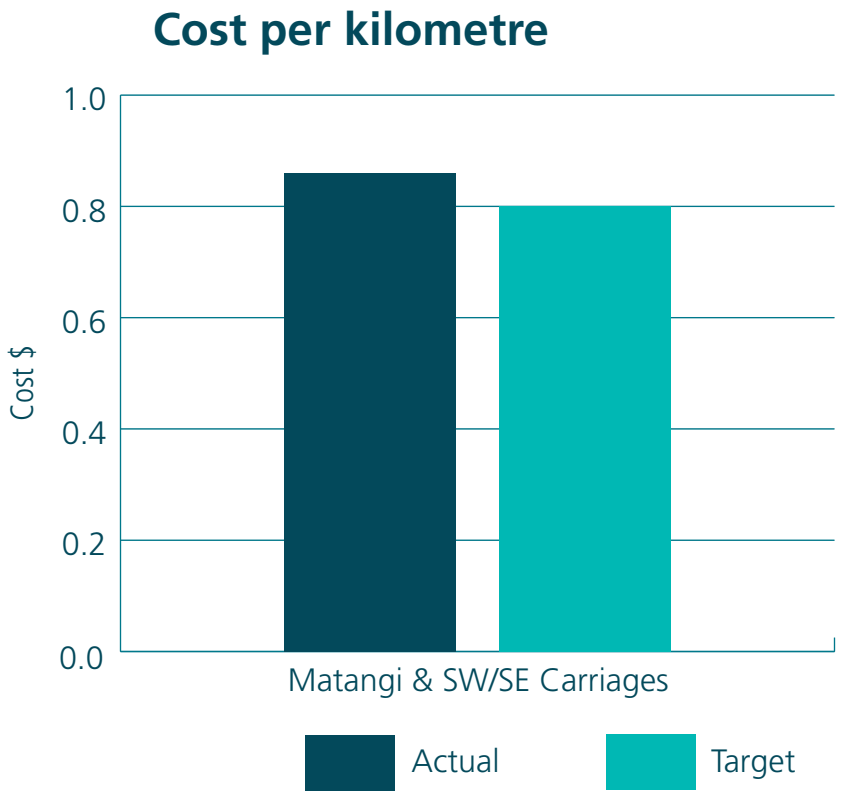
76 EMUs and 20 carriages are required each day to meet the weekday morning and afternoon peaks. The Matangi EMU fleet supplies all services on the electrified network. The SW and SE carriages are tasked in proportion to the fleet sizes to supply capacity to the Wairarapa line.

The availability of all fleets across the year has in general met the timetabled requirements, however for periods during the year, Matangi fleet availability was poor due to a back log of Matangi heavy maintenance, and an increase in failures. We have been working with our operational and maintenance partners to further improve the fleet availability.

FLEET MAINTAINABILITY

Maintenance of GWRC's rail rolling stock is carried out by Hyundai-Rotem, a sub-contractor to the Transdev – GWRC – GWRL Partnering Contract. The contract provides for the delivery of a planned maintenance and heavy maintenance renewals schedule, which is set against a pre-determined availability and reliability requirement, and unplanned maintenance is in response to equipment faults and breakdowns.

Due to ongoing contractual non-compliance and overall asset condition and performance issues, we have been working with our Operator and Maintenance Partners, who have engaged a leading rolling stock consultancy Ricardo to deliver a business recovery plan, programmed to be completed by early 2020.



The maintenance costs (operational expenditure) are similar to that expected. Due to the fixed price nature of the Partnering Contract, the costs per kilometers are influenced only by actual operational fleet kilometers run.

5.4 OUTLOOK FOR 2019/20

- Improved contractual compliance and rolling stock performance as a result of business recovery plan
- Obtained funding for replacement of our carriage fleet with new dual mode multiple units.

Simulator trainer control desk

6 ASSET MANAGEMENT: STATION-BASED ASSETS

6.1 OVERVIEW

GWRC's station based assets include:

Asset Group	Asset Type	Quantity
Stations	Various	47
Station Buildings	Buildings	25
Station Shelters	Shelter	50
Station Pedestrian Structures	Overbridges	12
	Subways	13
Facilities	Cycle racks & lockers, seating, litter bins	Numerous
Access	Paths, handrails, fence, stairs, barriers, ramps	N/A
Park & Ride Sites	Car park	41
CCTV	CCTV equipment & infrastructure sites	27
Rail Depot Buildings	Buildings	2
Miscellaneous	Depot equipment	N/A
Signage	Signs	Over 750
Lighting	Lights	Over 1,100

Ownership of these assets carries significant responsibility for their management which includes funding their maintenance, refurbishment, disposal, and replacement with support from Government.

GWRC's Public Transport Asset Management Plan, which covers rail station assets, was adopted on 30 June 2018. The Asset Management Plan articulates the required level of investment over the next 30 years, and is a living document.

6.2 ACHIEVEMENTS

- Construction of a further 188 car park spaces was completed at Porirua, which included the first rain garden to undertake best practice storm water filtration prior to release into the habour
- Redwood station had a new shelter constructed improving weather protection and providing more internal space and seating for customers, the shelter also received improved CCTV cameras
- The historic Carterton station building received improvements to increase the seismic rating of the building from 55% to 67% the building also underwent considerable repairs and painting
- Kenepuru pedestrian bridge was seismically upgraded to improve the strength of the bridge from 34% to 67%, the bridge was also cosmetically upgraded
- Paraparaumu was the first station to receive the prototype two tier cycle rack system and shelter, the racks can accommodate 24 cycles
- A full refurbishment of the EMU wash buildings was undertaken, including repairing the steel structure and recladding the buildings
- Installation works began on installing CCTV to all stations on the Johnsonville line and is due to be completed early in the new financial year
- The rail network saw the introduction of new wayfinding signs for stations with 21 stations on the Kapiti and Hutt lines being the first to receive them
- A seismic upgrade of the historic Paekakariki station building, along with stage 1 of 3 to replace the building piles and undertake an internal refurbishment, stage 2 and 3 are due to start in the new financial year
- Melling station underwent repairs to the roof and the whole building was repainted in heritage colours
- 300 sqm of tiling was replaced in the subway at Waterloo station. Also, Waterloo station ticket and toilet kiosks exterior was fully re-tiled. The high canopy lights at Waterloo were replaced with LED lights, to improve the lighting within the station during both day and night
- Improvements were undertaken in the staff male locker room in Wellington station, including new floor vinyl, LED lighting and window blinds
- Accessibility improvements were made by installing handrails at Awarua Street, Epuni and Taita stations
- Paraparaumu and Pomare stations received improved anti-slip coatings on stairs open to the elements
- A number of other stations including Petone and Epuni were repainted.

6.3 AVERAGE CONDITION GRADING BY LINE

Greater Wellington Regional Council measures the performance of its station based assets by reference to an asset condition assessment. This grades all assets on a scale of 1 – 5 with 1 being excellent and 5 being extremely poor. The following table presents a summary of the average asset condition grading for the major assets by line.

Line	Station Buildings		Station Shelters		Overbridges		Subways		Parking Sites	
	Qty	Av Grade	Qty	Av Grade	Qty	Av Grade	Qty	Av Grade	Qty	Av Grade
Johnsonville	1	2.0	11	2.1	1	2.0	-	-	7	2.5
Kapiti	9	1.8	16	1.75	3	2.3	5	2.0	11	1.7
Melling	1	2.0	1	2.0	-	-	-	-	1	4.0
Hutt Valley	10	3.0	14	2.7	8	2.9	8	2.3	15	2.6
Wairarapa	4	2.3	7	2.2	-	-	-	-	7	3.0

The purpose of the maintenance programme is to maintain the assets at a condition grade of 3.0 (good) or better. The like for like renewals and improvement programme focuses on those assets graded worse than 3.0 which need to be renewed or improved.

6.4 OUTLOOK FOR 2019/20

- Kenepuru, Linden and Woburn bridges will all undergo seismic strengthening
- Information Signage to be installed at all stations
- Expansion of Waterloo and Paremata Park & Ride
- Installation of CCTV and PA across the Johnsonville line
- Increase station cycle storage facilities
- Commencement of work to fully replace the Customer Information System at Wellington station.


HYUNDAI

7 STRATEGIC MANAGEMENT

7.1 FRAMEWORK FOR THE STRATEGIC MANAGEMENT OF METRO RAIL

GWRC's strategic management of metro rail is guided by a hierarchy of strategic plans and policy documents originating from central government and GWRC decisions. These plans and documents are the:

- Passenger Transport Operating Model (PTOM)
- Metro Rail Operating Model
- Wellington Regional Land Transport Strategy
- Wellington Regional Public Transport Plan
- Wellington Regional Rail Plan
- Greater Wellington Regional Council's Long Term and Annual Plans.

7.2 PERFORMANCE MEASUREMENT

In 2018/19 GWRC measured its performance in the strategic management of metro rail by reference to the longer term strategic objectives and outcomes contained in the documents above. The PTOM has provided an important new basis against which we will measure and report our performance.

METRO RAIL OPERATING MODEL

The Government's Metro Rail Operating Model is intended to provide assurance that taxpayer funding of metro rail yields best value for money. The four principal requirements of the model and progress toward their achievement are shown below.

Requirement	Metro rail contribution 2018/19
All of the parties involved in the purchase and delivery of metro rail services will have clear roles	Following the implementation of the Wellington rail package in 2011, and the introduction of the new PTOM passenger Services Agreement in 2016 the role of all parties has been further clarified and consolidated through improvement to our contracts with KiwiRail and Transdev.
The operation of metro rail services and routine maintenance of metro rolling stock will be contestable (at the discretion of the funding region)	Transdev delivered the winning bid and has managed the operation of rail services and maintenance of the rolling stock since 3rd July 2016.
There will be a strong focus on performance based contracts with appropriate transfer of risks for the delivery of metro rail services	The new contracting arrangement is based on performance of services, with performance measured across the whole network. The Wellington Network Agreement has a performance based element attached to network caused delays and cancellations. The station cleaning and light maintenance contracts have a comprehensive performance measurement regime.
There will be a strong focus on transparency so that costs, accountability and who pays can be clearly identified	The Wellington Network Agreement has secured regular access to comprehensive information from KiwiRail on the cost of network services. This annual report is intended to provide increased transparency which has been enabled in part by improvements GWRC and KiwiRail staff have made to financial reporting templates.

WELLINGTON REGIONAL LAND TRANSPORT STRATEGY

The Regional Land Transport Strategy 2010-2040[1] (RLTS) identifies a number of outcomes sought for the region's land transport network over the next ten years.

RLTS outcomes	Metro rail contribution 2018/19
Increased peak period passenger transport mode share	Rail patronage in peak period increased by 7.3%.
Increased mode share for pedestrians and cyclists	Free carriage of bicycles was continued, there is now an increase of bike capacity on all weekend Wairarapa services.
Reduced greenhouse gas emissions	Transport-generated CO2 emissions totalled 1,208 kilotonnes in 2018/19, an increase of 1.5% compared to 2017/18, and above the RLTS 2025 target of 956.
Reduced severe road congestion	Preliminary analysis[4] by NZTA has predicted that the impact of rail patronage being transferred to the state highway network would generate 1 hour and 42 minutes additional journey time. This is based on peak period congestion relief at Ngauranga through the reduction of 4,972 vehicles at the AM peak of 0700hrs to 0900hrs (equivalent to 6,811 rail passengers). The impact of these additional vehicles would result in the state highway network breaching full capacity prior to the peak with significant queuing occurring which spills over to breach capacity constraints through subsequent time periods.
Improved regional road safety	More peak patronage means safer travel for more people, as rail is a safer transport mode than road.
Improved land use and transport integration	More Park & Ride facilities installed at Porirua. Paremata Park & Ride extension is in progress, and designs and land acquisition for an extension at Waterloo is planned for next financial year.
Improved regional freight efficiency	New more reliable metro trains means the entire network is more reliable (i.e. freight trains reliability not compromised by disabled metro trains).

1 http://www.gw.govt.nz/rlts/

4 This preliminary analysis was validated by the congestion impact on SH2 caused by storm damage to the seawall undermining the railway line forcing closure between Petone and Wellington for 7 days in June 2013. Reports indicated travel times of up to 1 hour 20 minutes between Melling and Wellington. http://www.stuff.co.nz/dominion-post/news/hutt-valley/8833240/Hutt-traffic-grinds-to-a-standstill

WELLINGTON REGIONAL PUBLIC TRANSPORT PLAN

GWRC's Regional Public Transport Plan 2011- 2021[51] (RPTP) identifies a number of objectives sought for the region's land transport network over the next ten years.

RPTP objectives	Metro rail contribution 2018/19
Simple, easy to understand services that go where people want to go	Real Time Information remains operational at all stations. The four rail lines provide routes that are easy to understand and connect regionally significant centres.
An integrated network of services that makes it easy and safe to change between and within modes	A large number of bus services are scheduled to connect with the metro rail services, park & ride parking is provided at many stations and fixed bike parking/storage is provided at many stations and on trains.
A high quality, reliable public transport system that customers choose to use	The quality of the metro rail rolling stock and station assets was improved with rolling stock modification programs and station upgrades. Service reliability and punctuality improved – refer Section 4.
Improved accessibility for communities and groups whose needs are not met by the regular public transport network	All rolling stock has wheelchair accessibility. The Total Mobility Scheme is reported on separately.
Public transport operations that provide comfortable and safe travel, and minimise adverse environmental effects and improve health outcomes	With the exception of the Wairarapa line the metro rail services use electricity from renewable sources. The comfort and safety was improved through rolling stock and station upgrades.
A high standard of public transport infrastructure	The quality of the metro rail rolling stock and station assets was improved.
A fare schedule that attracts and retains customers and balances user contributions against public funding	Metro rail fares are included within the overall Metlink fare structure.
An integrated system of fares and ticketing that enables seamless travel between services and modes	A few integrated fare products existed during the year, but this objective will only be met when we have a full integrated fare system in the future.
A consistently branded transport system that is easy to use, offers a consistent customer experience and generates customer loyalty	The Metlink Brand is the only brand seen by passengers across the Rail network. Customer service training is now a standard part of metro operations training.
An integrated public transport network that provides value for money	Bus services scheduled to connect with train services. RTI in place across bus and rail services.
Effective and efficient allocation of public funding	Improved financial and management monitoring and reporting provided increased confidence that spending is effective and efficient.

5 gw.govt.nz/regional-public transport-plan

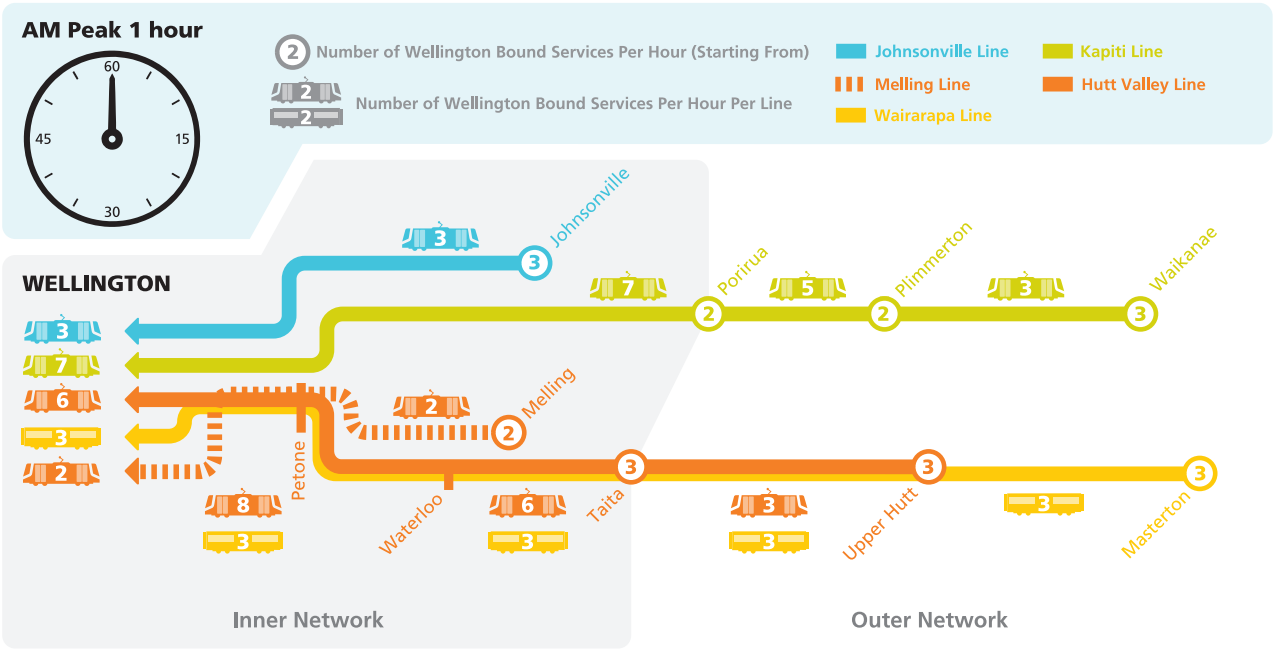
REGIONAL RAIL PLAN

The Regional Rail Plan (RRP) provides for the longer term improvement of the metro rail system. It aims to maximise return on the investment of recent years and deliver a high quality rail service by addressing infrastructure issues facing the system.

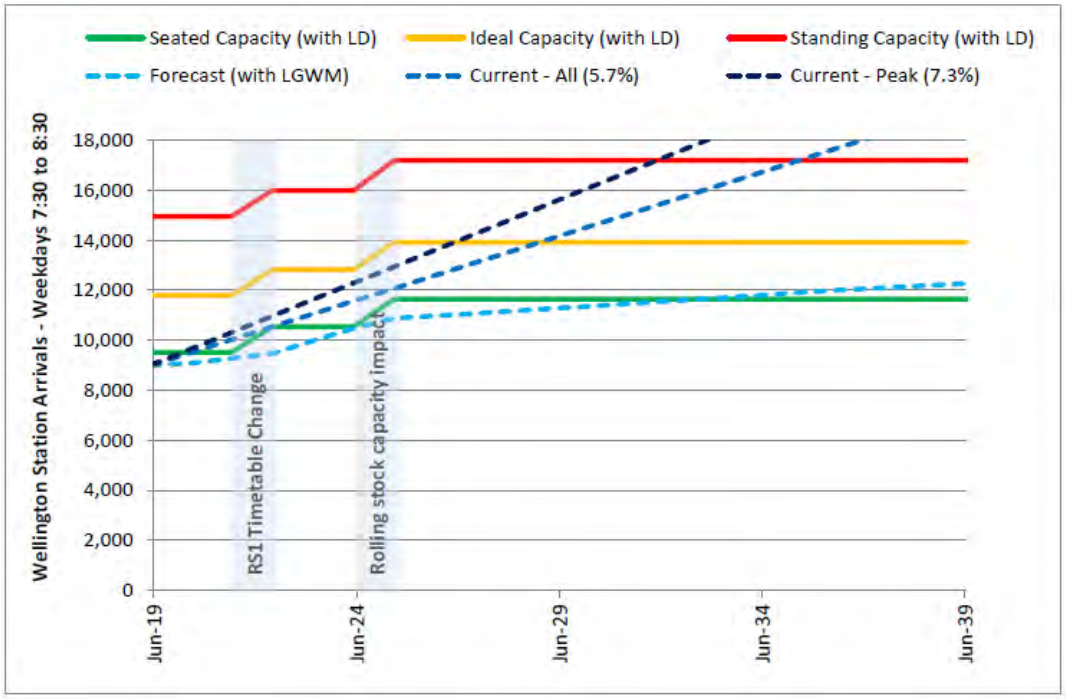
During 2012/13 GWRC completed the first revision to the 2010 RRP, which is subtitled 'A Fresh Look at a Better Rail Experience'.

The 2013 revision to the RRP:

- Takes into account the significant network improvements made since 2010, the benefits they have delivered, changing patterns of use, customer and community expectations and the constraints imposed by the current economic climate
- Primarily addresses the short-medium term development of the Wellington passenger rail network to 2020 through the implementation of Rail Scenario 1 (RS1). The service pattern diagrams below illustrate the current and proposed RS1 number of trains in the AM peak hour
- Signals how the development of the network may occur from the end of RS1 in 2020 through to 2035 as set out in the diagram below:

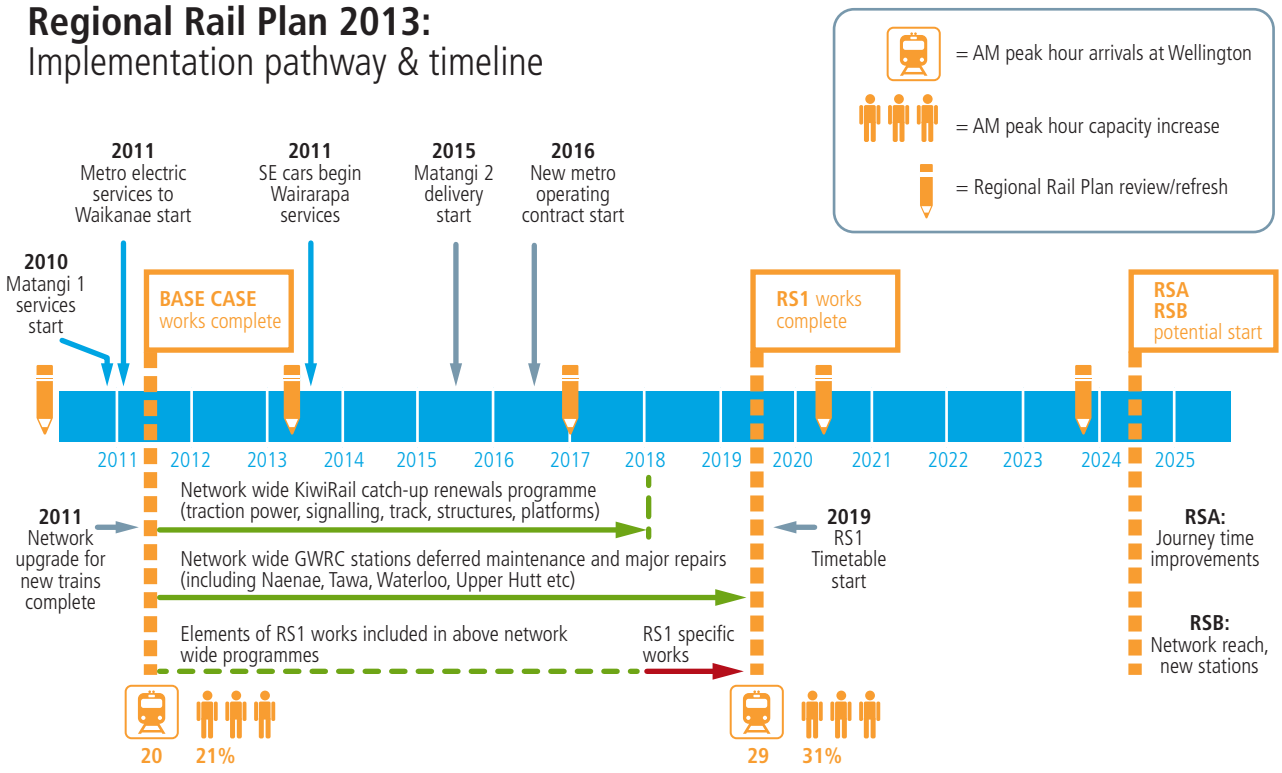


Current operation service levels



Current projections of capacity and patronage

Updated RS1 service strategy diagram



The 2013 revision was approved as part of the RPTP consultation process in late 2013/14

The 2013 revision was approved as part of the RPTP consultation process in late 2013/14.

The preparation and revision of the RRP is a condition of on-going rail funding from the NZ Transport Agency (NZTA) and key elements now form part of the Regional Public Transport Plan (RPTP).

GREATER WELLINGTON REGIONAL COUNCIL LONG TERM PLAN

Strategic outcomes are set out in GWRC's Long Term Plan 2018-28 (LTP). As with other public transport modes, Wellington's metro rail service contributes to several LTP strategic outcomes:

- The 'connected community' outcome, by enabling people to connect well with others in the Wellington region
- The 'strong economy' community outcome, by reducing road congestion and increasing the efficient movement of people and goods within the region
- The 'healthy environment' outcome, by reducing private vehicle usage and the associated emissions.

The LTP identifies the key projects and programmes for the Public Transport Group over the first three years:

What we said we would do	What we did
Review Metlink in Kapiti in preparation for the opening of the MacKays to Peka Peka Expressway	There are planned Rail timetable changes were implemented in 2018 and a number of services have had extra capacity added to meet the increased passenger demand. In 2018/19 a new Kapiti service was introduced in the morning peak to provide extra capacity while roadworks near McKays Crossing continue.
Undertake targeted reviews of some Metlink services in preparation for the introduction of the PTOM contracts	A review of services has taken place, extra capacity has and will continue to be added and a new timetable was implemented in 2018
Review reliability of Metlink service timetables for inclusion in PTOM contracts	A review of services has taken place, extra capacity has and will continue to be added and a new timetable was implemented in 2018

New shelter at Redwood Station

- For Rail Operations there are targeted performance and work achievements, including improving Rail Assets and Park & Ride development. Over 2018/19 we have upgraded Taita Station, replaced Ava and Manor Park shelters and refurbished Plimmerton and Porirua Station.

Level of Service	Performance Measure	Baseline	2018/19 Performance Target	2018/19 Actual
Deliver rail services in accordance with the published timetable	Percentage of scheduled services delivered	97.2% (2017)	99.5%	95.3% Performance was affected by a number of mechanical issues and staff shortages meaning that services ran with reduced capacity
	Percentage of scheduled services on-time to 5 minutes by line	Kapiti 95.4%	95%	83.3% Performance was affected by two overhead power incidents in January and a number of signal outages
		Hutt 95.3%	95%	88.4% Performance was affected by two overhead power incidents in January and a number of signal outages
		Johnsonville 93.3%	95%	97.3%
		Wairarapa 74.5%	85%	57.2% Performance was adversely affected by speed restrictions
Maintain and improve rail rolling stock, stations, overbridges, subways and carparks in accordance with rail asset management plans	Average condition rating	(12 Rolling Stock) Matangi 1.0 Ganz 3.7 SW: 2.2	Under 2.5	Matangi 2.0 Ganz: Retired SW: 3.0
	Average condition rating for buildings and structures (1 = very good and 5 = poor)	Stations: 2.6 Structures: 2.4	Under 2.5	Stations: 2.3 Structures: 2.5
	Average condition rating for carparks (1 = very good and 5 = poor)	2.0	Under 2.5	2.5

7.3 OUTLOOK FOR 2019/20

GWRC is well placed to deliver in 2019/20 on the various strategic outcomes, goals objectives and targets that are contained in the strategic documents identified and the new PTOM operating arrangements will continue to achieve Central Government's objectives of better value for money through:

- Increasing commerciality
- Increasing patronage
- Decreasing subsidies.

New Bike shelter and Way-finding information at Waterloo Station

GLOSSARY

AMP	Asset Management Plan – a tool to minimise the life-cycle costs of asset ownership while maintaining required service levels and sustaining the value of the initial investment
CAT	Common Access Terms – the access rights and responsibilities that are binding on all users of the NZRC rail network
EMU	Electric Multiple Unit. Wellington's EMU units all comprise two cars – a powered car and a trailer car
Ganz Mavag	EMU constructed by Ganz Mavag in Budapest Hungary, in service since 1982
GPS	Government Policy Statement - establishes 10 year priorities for NZTA's expenditure from the National Land Transport Fund, which includes funding of metro rail
GWRC	Greater Wellington Regional Council
GWRL	Greater Wellington Rail Ltd, a company owned by Greater Wellington Regional Council (via WRC Holdings Ltd) through which Council holds its rail assets (except land)
KiwiRail Ltd	The NZRC owned company that operates freight and long distance passenger rail services in New Zealand. Bought by Government in 2008, formerly named Toll NZ Holdings Ltd.
KPI	Key Performance Indicator – a principle measure of service delivery performance
Matangi	EMU constructed by Hyundai Rotem in South Korea and in service from 2011
MSO	Metro Service Operator – GWRC's contracted operator of metro rail services (currently Transdev)
MDBF	Mean distance between failure - the fleet average kilometres travelled without a failure that results in a service cancellation or delay of 5 or more minutes.
Notifiable occurrences	The primary measure of safety, defined as any of the following:
a)	the death of any person where that death is associated with the metro rail system;
b)	a serious injury to any person requiring emergency medical treatment or admittance to hospital, where that injury is associated with the metro rail system;
c)	any serious attack upon a Rail Services passenger or staff member that is attended or investigated by the New Zealand Police;
d)	any derailment of any Rolling Stock while in revenue service or which results in damage to property in excess of $100,000;
e)	any significant unplanned delays to the provision of the metro rail services resulting in emergency implementation of contingency arrangements;
f)	any threat or action that is deemed an act of terrorism by the New Zealand Police;

Numbers in Revenue and Expenditure in tables 8.1 – 8.7 have been rounded to the nearest $ million.
This may give the appearance that some numbers do not add exactly.

g)	any collision between any Rail Vehicle and any person, other vehicle, Infrastructure or any other obstruction resulting from the construction, maintenance or operation of the metro rail system which results in significant damage to any property;
h)	any fire, explosion or any other occurrence resulting in significant property damage
NZTA	The New Zealand Transport Authority, a crown agency with responsibilities that include managing government's investment in transport infrastructure and public transport services expenditure
NZRC	The New Zealand Railways Corporation trading as KiwiRail
Punctuality	The percentage of train services that arrive or depart Wellington Station at, or within 5 minutes of their scheduled time
Reliability	The percentage of timetabled services that are actually delivered
RTI	Real Time Information – a system that provides continuously updated information to passengers about actual arrival time. Data transmission from Global Positioning System devices installed on trains makes this possible.
RLTS	Wellington Regional Land Transport Strategy – 10 year strategy toward a balanced and integrated local land transport system
SE	Passenger carriage class currently used on the Wairarapa Line
SW	Passenger carriage class currently used on Wairarapa line
SPAD	Signal Passed at Danger - a safety event that occurs when a train passes a trackside signal without authority to do so
RRP	GWRC's Regional Rail Plan – a 25 year plan for developing the capacity of Wellington's metro rail to meet emerging demand
WRCHL	Wellington Regional Council Holdings Ltd, a GWRC company which owns Greater Wellington Rail Ltd and GWRC's other trading companies
WRRP	Wellington Regional Rail Programme - $500m government investment in renewing and modernising the Wellington network that was undertaken between 2007 and 2012
WMUP	Wellington Metro Upgrade Plan - a further $88m government investment in the network that began in 2011/12. Primary focus is replacing poles that support the overhead traction system

Numbers in Revenue and Expenditure in tables 8.1 – 8.7 have been rounded to the nearest $ million. This may give the appearance that some numbers do not add exactly.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