Rail Network Investment Programme

2022/23 Annual Report

WAKA KOTAHI
NZ TRANSPORT AGENCY

Te Kāwanatanga o Aotearoa
New Zealand Government

Contents

Executive Summary

Waka Kotahi NZ Transport Agency produces an Annual Report on the Rail Network Investment Programme (RNIP) as part of its monitoring function under section 102A of the Land Transport Management Act 2003.

Progress towards outcomes in 2022/23

The NZ Rail Plan outlines a monitoring framework to assist in measuring the achievement of outcomes across the wider programme of government investments to restore a resilient, reliable, and safe freight and passenger rail network for New Zealand. The framework covers a wide range of topics across KiwiRail's above and below rail businesses. Results for 2022/23 are shown below.

Table 1: Overall outcome results for 2022/23

Outcome	Target	Trend
Improve the Value of Rail	■	↔
More Freight carried by rail	●	↓
More people travel by rail	▼	↔
Reduced emissions	▲	↔
Fewer fatalities and incidents	▼	↓
Rail network is more efficient	▲	↑
Rail network is more reliable	▼	↓
Rail network is more resilient	▲	↔
Fair access to the network	▲	↔

Key			
▲ Achieved target	● Within 10% of target	▼ >10% below target	■ Not reported this period (Tri-annual)
Trend (to prior year)	↑ doing better	↔ no change	↓ doing worse

Of particular importance to measuring the success of investment through the RNIP is the set of Key Performance Indicators (KPIs) under the network condition indicator. Performance against these KPIs has remained variable with temporary speed restrictions remaining the biggest issue on the network. Many of these restrictions are in place due to ongoing improvement and renewal works on the network and will continue until KiwiRail has completed these programmes. We note that this is year two of a 10-year programme so there is still significant work to be completed to improve overall network condition, but progress is being made towards this result.

This report also highlights performance in the Auckland and Wellington metros using resilience and reliability results to demonstrate how customer performance is being delivered.

Punctuality (on time performance) has declined compared to last year in both Auckland and Wellington, with a significant decline in peak period punctuality in Wellington. This has been driven by the significant capital and maintenance works that are in progress in the two metros.

Reliability (percentage of services cancelled) has also worsened, with a significant decline in Auckland as a result of the Rail Network Rebuild line closures.

Additional investment is still required to bring the network condition up to the agreed standard and achieve the desired level of service in both metros. While improvement works are occurring through current improvement projects, the works themselves result in significant disruption which negatively impacts customer performance. Cost increases and pressures remain on these projects, and we highlight the criticality of fully funding the remaining works as a priority.

Summary of key findings

Impact of extreme weather events

This year's delivery was impacted by the two major weather events in the North Island. These were the Auckland Anniversary weekend floods (late January) impacting Auckland, Northland, and the Bay of Plenty, and Cyclone Gabrielle (early February) impacting a significant amount of the network in the North Island. These weather events disrupted six months of the financial year and will continue to utilise valuable resources during the ongoing recovery phase. While the overall impact of these events was significant, the delivery of the renewals programme in 2022/23 was not significantly impacted and KiwiRail was able to work around any issues to achieve overall delivery targets. However, an impact was felt across the civils and structures teams with design resources diverted onto the delivery and approval of recovery tasks. These events have impacted KiwiRail's performance against RNIP KPIs.

Disruptions to supply chain

Disruptions to the supply chain were not as evident this year and overseas supply issues have been well mitigated through the early procurement of materials. The disruptions that were evident were often in related to events happening in Australia rather than further afield.

KiwiRail effectively mitigated these issues as much as possible through a number of initiatives including reprioritising to reflect constraints, obtaining engineering approvals for alternate products, bulk ordering and ordering components and utilizing domestic manufacturing where possible.

Plant procurements remain critical

Progress on the procurement of plant is proceeding generally as planned and remains critical to enabling productivity and programme outcomes.

Progress on the procurement of four additional tamping machines remains on track and is perhaps the most urgent of all current procurements. Additional tamping capacity is critical to removing temporary speed restrictions on the network. KiwiRail has also procured a second-hand tamper from Japan which arrived into New Zealand in August 2023. This will go into service shortly.

A replacement EM80 Track evaluation car (TEC) has also featured in the RNIP since its inception and is now well into the procurement phase with tenders having closed in March 2023. This remains on track for delivery as planned and we note KiwiRail is investigating alternatives to supplement the current TEC that can carry out more continuous track inspections on the metro networks.

Thirty wagons (known as EWR wagons) which are used to transport and handle lengths of rail are being procured through this RNIP and the request for tender process closed in April 2023. The contract award was delayed allowing time to fully evaluate and complete negotiations, with anticipated build completion in December 2024 and commissioning February 2025. There will be a delay of one year compared to the original schedule for delivery within the RNIP. The advanced ordering of rail components can help in mitigating the impact of the delay, but it will constrain KiwiRail's ability to ramp up activity as quickly as planned.

Recruitment of resources has continued strongly

Significant levels of recruitment are required to deliver the RNIP. In our first Annual Report we noted that just over 80% of the planned intake of front-line staff had been achieved. This year completes the initial step up in resourcing required and KiwiRail is currently sitting at 93% of roles filled across the full programme.

Cost pressures and escalation remains a real issue

Cost escalation remains a significant risk to the delivery of the 10-year programme and the effect of inflation over the 10 years of the programme could be more than $500 million. Current cost pressures include rail costs increasing 39%, with sleepers increasing 22% and turnouts around 25%. Shipping costs have also increased significantly. We also note the cost of KiwiRail's annual insurance premium has increased significantly following the extreme weather events this year. We are concerned that if sufficient funding is not provided than current and future cost pressures will need to be managed by deferring renewals to remain within overall budgets.

Renewals programme delivery

Overall, renewals delivery has been strong in most asset classes for the national freight network. Of particular note has been the delivery of track renewals with a total of 90.3 kilometres of track and sleeper renewal being completed. This is 4.5 kilometres more than planned and targets for rerailing, resleepering and full track relays were all exceeded. This year's outturn is also an increase of 16% from 2021/22. Overall, this is an excellent result. However, the civils and structures programmes were impacted by design and consenting delays and did not achieve targets. These delays were often driven by the need to divert resources to KiwiRail's weather event response. Programme management remained agile and responded well to changes to the programme.

While the renewals programme for the freight network has progressed well, issues remain in the two metro networks. In the metro networks, routine renewal (and maintenance) costs are shared between central and local government. Since the publication of the RNIP, KiwiRail has increased its estimates of the quantity and cost of renewal (and maintenance) activity in both metros to reflect updated asset condition information, additional testing for Rolling Contact Fatigue (RCF), inflation and other cost pressures (e.g. insurance). This added increased pressure on councils' ability to budget and pay and has led to a significant shortfall in the actual contribution compared to what was finally requested and a total of $80.1 million of necessary renewal and maintenance work being deferred.

Finding a solution to the affordability of the metro networks renewal and maintenance costs is a critical issue to enable the metro networks to be maintained to the level of service desired by the customer. This work will be taken forward, led by Te Manatū Waka – Ministry of Transport, through a review of the Metro Rail Operating Model.

KiwiRail has begun to develop benchmarking across its activities to support future programme costing and to demonstrate value for money. We consider the development of a robust set of benchmarks is a matter of priority and recommend that KiwiRail progress this at pace to support the assessment of RNIP 2024-27, and this should be complemented with further work to increase project and programme delivery maturity and cost analysis.

Asset Management Continuous Improvement Programme (CIP)

The CIP is progressing well, and we remain satisfied that the initiatives identified in the CIP will go a long way to resolving many of the issues identified in our initial RNIP assessment and advice. We continue to connect the Lead Asset Management Advisor from Waka Kotahi with KiwiRail's General Manager Asset Management, so they are able to share knowledge and support each other to increase both organisations' asset management maturity.

Good progress is being made on the deliverables within the programme with many now complete and the remaining items in progress. We are already seeing the benefits of the improved CIP deliverables as we receive KiwiRail's asset management documents to support RNIP 2024-27.

Metro improvement projects

At commencement of the year KiwiRail was forecasting $38.9 million of expenditure on the metro projects in the RNIP. Two projects represented almost 80% of the total forecast expenditure – the Auckland Integrated Rail Management Centre and the Auckland Additional Power Feed. The final out-turn for the year was $21.4 million (45% under original estimates).

The Integrated Rail Management Centre is now well into construction and is progressing well. Expenditure this financial year was below the amount originally forecast due to lower contractor fixed costs, lesser payments for early materials procurement than expected, re-scheduling of training for train controllers, and no requirements for forecast contingency.

The Additional Power Feed project has experienced some delays due to extended negotiation times on key contracts. These are now complete with contracts awarded. These delays have driven the variance to budget this year pushing cost into 2023/24 and will now impact the overall project delivery timing meaning a carry-over into the 2024-27 period. The project is still expected to be completed before CRL goes live.

Programme level risks and issues

KiwiRail continues to manage RNIP delivery risks and report them to Waka Kotahi as part of monthly and quarterly reporting. We consider that these capture the relevant topics and have suitable mitigation plans in place. The risks consider the wider KiwiRail works portfolio in its assessment and management. We are continuing to work with KiwiRail on mitigations, and ways to maximise the opportunities that the multiyear funding provides.

Looking forward to 2023/24

The final year of the first RNIP sees a further planned increase in the quantity of track renewals and civils works. Based on achievements to date we consider these are challenging but achievable targets. We note that the Cyclone Gabrielle recovery works will add a significant amount of work to the annual work bank and may pose a risk to deliverability.

There are a number of areas where KiwiRail will need to focus on in the final year of this RNIP if it is to achieve the stated outcomes for this period (to deliver improved asset condition on priority network routes, and improved asset management maturity and data quality to support decision making). They relate to all temporary speed restrictions (priority and secondary routes), rail condition faults and defects, track quality and structures risk reduction.

Based on this year's delivery, KiwiRail has updated its 3-year estimated cashflow. This now shows an expected underspend and carryover into 2024-27 of between $65 and $115 million (an update and tightening from last year's forecast which was between $85 and $170 million). This will reduce if KiwiRail transfers funding from renewals to maintenance, management and operations to help mitigate the cost pressures noted above.

In Summary

Renewals delivery has been strong in most asset classes for the national freight network with track renewal target being exceeded. This is an excellent result.

Supply chain disruptions were not as pronounced this year, but disruption was experienced due to a number of extreme weather events. These events led to a diversion of resources away from planned works (particularly impacting civil and structures staff).

While network condition KPIs have remained variable, we note this is year two of a 10-year programme so there is still significant work to be completed to improve overall network condition.

Issues remain in the two metro networks where affordability issues for local councils have led to a reduction in planned critical work. This is leading to significant disruption and highlights the criticality of finding a solution to the current affordability issues. As a critical first step to resolution the Ministry of Transport are now commencing a review of the Metro Rail Operating Model.

Cost escalation remains a significant risk to the delivery of the 10-year programme. We are concerned that without sufficient funding current and future cost pressures will need to be managed by deferring renewals to remain within overall budgets.

KiwiRail have begun to develop benchmarking across their activities to support future programme costing and to demonstrate value for money. We consider that the development of a robust set of benchmarks is a matter of priority and recommend that KiwiRail progress this at pace to support the assessment of RNIP24-27, and that this should be complemented with further work to increase project and programme delivery maturity and cost analysis.

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Section 1: Purpose and scope

1. This report is the Waka Kotahi NZ Transport Agency Annual Report on the Rail Network Investment Programme (RNIP), as required under section 102A of the Land Transport Management Act 2003 (LTMA).

2. Under section 102A Waka Kotahi must:

- **a.** monitor the provision of rail activities or combinations of rail activities approved by the Minister under section 22F; and
- **b.** monitor the extent to which the rail network investment programme –
  - › contributes to the purposes of this Act; and
  - › is consistent with the Government Policy Statement (GPS) on land transport; and
- **c.** report annually on its findings to the Minister.

Section 2: Background and context

RNIP Approvals to date

3. A summary of RNIP approvals to date, including a table summarising the costs associated with those approvals, included in Appendix A.

Summary of first Annual Report

4. In November 2022 we submitted our 2021/22 Annual Report. A summary of the report is below:

- Notwithstanding the supply chain disruptions that were experienced, progress was strong in what was the first year of a ten-year programme. KiwiRail delivered their largest annual capital programme yet.
- Once supply chain issues had been assessed, targets were amended and KiwiRail delivered well against those targets.
- Programme management was agile, and delivery was optimised as things changed.
- The flow on effect of delays and the natural growth of the programme meant some work will now be deferred to the 2024-27 period. This was expected to be between $85 and $170 million.
- We recommended KiwiRail develop an overarching productivity programme. This would review lessons learnt from delivery to date and identify continuous improvement initiatives for future RNIP delivery.

Section 3: Annual Report on the delivery of the RNIP 2022/23

5. This section summarises the delivery of rail activities approved under section 22F and reconfirms that the activities continue to contribute to the purposes of the LTMA and are consistent with the GPS 2021. In this section we will:

- Provide a summary of the suite of reporting metrics in the NZ Rail Plan and RNIP to show how the delivery of activities are contributing to the outcomes sought from the investment.
- Provide a summary of overall delivery, and (in an appendix) a commentary on the delivery of the individual activities.
- Reconfirm the activities contribution to the LTMA and consistency with the GPS 2021.
- Provide an update on the findings and recommendations from our initial advice and last annual report.

Part 1: Summary of reporting metrics and contribution to outcomes

6. Section 3 of the NZ Rail Plan (Measuring the benefits of investment) outlines a monitoring framework to assist in measuring the achievement of outcomes across the wider programme of government investments to restore a resilient, reliable, and safe freight and passenger rail network for New Zealand. The framework identifies seven 'success factors', and several draft indicators to measure progress (achievement) against the seven success factors.

7. A more detailed reporting framework has been developed within the RNIP that is consistent with the framework in the Rail Plan. This framework consists of three levels of reporting that provide increasingly detailed and more granular information, but that roll-up to demonstrate progress towards outcomes. It contains:

- Nine outcomes (the seven Rail Plan success factors, plus two additional outcomes)
  - Fourteen indicators (cascading up to the nine outcomes)
    - Thirty-six individual KPIs with targets (cascading up to the fourteen indicators) (plus other additional KPIs which are only measured every three years).

8. The outcomes and indicators cover a wide range of topics across KiwiRail's above and below rail businesses (such as on-time performance for freight and asset condition indexes). We are satisfied that they are consistent with good practice having reviewed them against international equivalents.

9. This annual report summarises the results at the 'Outcome' and 'Indicator' level for the current year (2022/23) and trend which signals how the indicators have moved since last year. It is important to note that outcomes are more appropriately measured and monitored over the longer term and improvements in reliability and resilience across the network will take some time to deliver. As such, there is a likelihood of fluctuation in indicators in the short term. Commentary is provided with a focus on the KPIs that pertain to RNIP delivery that flow up to indicators and outcomes.

Table 2: Overall outcome results for 2022/23 and trend demonstrating movement from previous year's results

Key			
Achieved target	Within 10% of target	>10% below target	Not reported this period (Tri-annual)
Trend (to prior year)	↑ doing better	↔ no change	↓ doing worse

Outcomes		Indicators		Summary commentary (As pertaining to RNIP delivery)
Improve the Value of Rail	■	Value of Rail Report	■	Measured tri-annually to support Rail Plan and GPS development.
More freight carried by rail	● ↓	Mode share for freight	● ↓	A subdued freight market towards the end of the financial year and the impact of severe weather events (resulting in line closures) led to a lower than planned freight volumes. The subdued market was felt across all freight modes and at ports. Mode share across road and rail remained consistent to the previous year.
More people travel by rail (passenger mode shift)	▼ ↔	More people travel by rail	▼ ↔	Commuter journeys remained below target but we note a 66% increase on the previous year. Of note, Scenic Tourism passenger numbers outperformed target and this was the first full non-covid year for Te Huia, with record patronage being achieved as people returned to the office and made use of the Government's 50 per cent fare reduction.
Reduced emissions	▲ ↔	Tonnes of greenhouse gases emitted per year	● ↔	
		Tonnes of avoided emissions	▲ ↔	

Outcomes	Indicators	Summary commentary (As pertaining to RNIP delivery)
Fewer fatalities and incidents ▼↓	Number of rail safety incidents ▼↓	The target was not achieved. KiwiRail is undertaking a reset of their Care and Protect culture and to address critical safety risks.
	Deaths and serious injuries (include KiwiRail Personnel/ KiwiRail Contractors, excludes non-KiwiRail incidents/suicides etc) ▼↓	
	Decreasing number of level crossings in service ▲↔	
Rail network is more efficient ▲↑	Rail freight productivity / utilisation ▲↑	
Rail network is more reliable ▼↓	Travel time reliability ▼↓	While the overall indictor is red, we note the overall result reported here includes age and reliability of rolling stock and Interislander fleet which are outside the scope of the RNIP. Within the scope of the RNIP is on-time performance of premier freight. This result was within 10% of target and would receive an 'Amber' rating.
	Number of derailments ▲↔	
	Network condition ▼↔	Individual KPI results remain variable particularly on priority routes. The KPI for temporary speed restrictions on priority routes has significantly worsened this year due to disruption from KiwiRail's renewals and upgrade works and the impact from the major weather events. Tamper availability has continued to impact the completion of works due to the scale of full programme. KiwiRail has 4 tampers ordered and have purchased a second-hand tamper in response.
Rail network is more resilient ▲↔	Number of outages ▲↔	
Fair access to the network ▲↔	Track access applications approved ▲↔	

Note: A number of these results also feature in KiwiRail's Statement of Corporate Intent and are subject to audit and confirmation.

10. Of particular importance to measuring the success of investment through the RNIP is the set of KPIs under the network condition indicator. As noted, these have remained variable with temporary speed restrictions (TSRs) remaining the biggest issue on the network.

11. The ongoing TSRs on the network are as a result of weather events, tamper availability and reliability, non-RNIP capital programmes, asset condition and planned renewal activities. We note that:

- The two metro networks continue to be severely impacted by TSRs due to the amount of upgrade projects underway and their related TSRs. This means short term disruption to achieve longer term benefits.
- There is fluctuation in TSRs numbers due to planned renewals and upgrades which impact on the KPI result.
- Unknowns like extreme weather events and any accelerated asset deteriorations have increased the number of TSRs in place.

12. KiwiRail continues to monitor and plan for the removal of TSRs. This work is ongoing and increased rail grinding, improvements to slope stability, bridge replacements and strengthening, and the introduction of new tampers will improve reliability of priority lines. As noted further in this report, KiwiRail has also procured a second-hand tamper from Japan which arrived into New Zealand in August 2023. This will go into service shortly.

13. Below, we also highlight the performance in the Auckland and Wellington metro networks using resilience and reliability results to demonstrate how customer performance is being delivered.

Auckland Metro Network Performance

14. Punctuality (on time performance) target was not achieved in 2022/23, with a result of 92.8% compared to a target of 95%. The result has also worsened compared to last year (2021/22 result was 97.2%).

15. Reliability (percentage of services cancelled) target was not achieved in 2022/23, with a result of 85% compared to a target of 98%. We note that KiwiRail and AT agreed to cancel services under the designed access model to achieve Rail Network Rebuild outcomes which caused the decrease. The result has also worsened compared to last year (2021/22 result was 97.1%).

16. In the Auckland metro network, there were a significant number of speed restrictions for the first half of the financial year, and while they reduced for the second half there was still a significant impact on punctuality performance. Extreme weather and major events between January and June 2023 also had a significant impact on performance. Other contributing causes impacting performance have been one off events, such as the effect of the Te Huia signal passed at danger (June), overhead line equipment bird strike (May), and a fire in the network control building (May). Trespass and axle counter failures (a device on a railway that detects the passing of a train between two points on a track) were the next biggest causes of cancellations and delay minutes.

17. Significant work is still required to bring the network condition to the desired standard and achieve the stated level of service. This work is ongoing through the Rail Network Rebuild project and the significant line closures to undertake this work has impacted the punctuality and reliability results. Significant cost pressures remain in this project, and while it is outside of the scope of the RNIP (as it was initially funded in 2018) we highlight the criticality of the project and how fully funding the cost increases must be seen as a priority to realise the benefits of the City Rail Link.

Wellington Metro Network Performance

18. The punctuality (on time performance) target was achieved in 2022/23, with a result of 96% compared to a target of 95.5%. However, the result has worsened compared to last year (2021/22 result was 98.8%). We also note that within the 2022/23 result, punctuality within the peak period has worsened significantly and dropped to 87.6%. This is a disappointing result as it relates to the periods of the highest patronage and is due to the increased frequency of train services during these periods (both morning and early evening). This means that any network disruption has a much greater impact on service levels and can often extrapolate out to services over a long period. Off peak services are much less impacted by network disruption as less services are travelling, and the network is not under as much stress.

19. The reliability (percentage of services cancelled) target was not achieved in 2022/23, with a result of 99.3% compared to a target of 99.8% The result has also worsened compared to last year (2021/22 result was 99.7%).

20. In Wellington, speed restrictions caused significant delays on all lines. There were a number of causes to these delays including slips and signalling issues, but with the greatest number relating to the ongoing upgrade projects (particularly on the Wairarapa Line). Extreme weather also had a significant impact on performance with slope failures causing significant delays on the North Island Main Trunk leading to extended journey times and a reduction of service.

21. As is the case in Auckland, significant work is still required in Wellington to bring the network condition to the agreed standard and achieve the stated level of service. This work is ongoing through the Wellington Metro Upgrade Programme and the ongoing works have also impacted the punctuality and reliability results. Cost pressures also remain in this project, and while it is outside of the scope of the RNIP (as it was initially funded in 2018) we highlight the criticality of the project and how fully funding the cost increases must be seen as a priority to enable the delivery of the RS1 (15 minute) timetable.

Part 2: Summary and commentary on delivery of activities

22. Waka Kotahi have developed a Monitoring Plan for RNIP 2021-24 which contains four key areas of focus:

- Renewals programme delivery
- Asset Management Continuous Improvement Programme (CIP)
- Metro improvement projects
- Programme level risks and issues.

23. These four areas are discussed below, but we first provide commentary on five common challenges that have affected all areas of delivery.

Extreme weather events impacted the network and affected some elements of delivery.

24. This year's delivery was impacted by the two major weather events in the North Island. These were the Auckland Anniversary weekend floods (late January) impacting Auckland, Northland, and the Bay of Plenty (with a significant slip developing on the North Auckland Line and a derailment on the East Coast Main Trunk), and Cyclone Gabrielle impacting a large portion of the North Island network. Flood waters undermined sections of the track and damaged structures. Assessments of the extent of the damage and rebuild options are ongoing and KiwiRail is now a participating organisation in the wider Transport Rebuild East Coast (TREC) alliance that was established for the Cyclone Gabrielle recovery.

25. These events have impacted on this year's KPI performance with a direct impact on Track Quality Index, Temporary Speed restrictions and Heat 40's on the damage primary lines and multiple KPIs on some secondary line as resources are diverted to other work.

26. These weather events caused major disruptions over six months of the financial year and require reallocation of valuable resources from other important RNIP activities during the recovery phase. Despite this, the delivery of the renewals programme in 2022/23 was not significantly impacted due to KiwiRail working around any issues to achieve overall targets. Reallocation of resources impacted the civils and structures teams with design resources diverted onto the delivery and approval of recovery tasks.

27. The impact of these extreme weather events is being assessed for the final year of the RNIP and there is a risk that both design resources (whether involved in actual design processes or the approval of third-party designs) and supply chain (contractor) availability will be limited as they are diverted onto the wider transport system rebuild.

Disruptions to supply chain continued but had a lesser affect.

28. Disruptions to supply chain were not as evident this year and overseas supply issues have been well mitigated through the early procurement of materials. The disruptions that were evident were often in related to events happening in Australia such as the nationwide port workers strike and wider Australian labour shortages impacting material delivery and adding to delivery times. Australian forest fires also drastically decreased timber supply below levels of demand.

29. Mitigations by KiwiRail included:

- reprioritising the forward works programme to reflect material capacity constraints
- obtaining engineering approvals for alternate timber products (such as timber sleepers from Africa)
- considering alternate port and transport arrangements to ensure delivery
- bulk ordering of equipment and rail components to reduce costs and improve the attractiveness of supply
- moving from a "just in time" delivery of rail components to an "just in case" delivery, which means KiwiRail is ordering components in advance for the following financial year and holding some inventory
- bringing manufacturing back to New Zealand, which reduces emissions and creates jobs for New Zealanders.

The procurement of plant remains critical to enable delivery performance and productivity improvements.

30. Plant is a critical enabler of productivity and programme outcomes. It enables KiwiRail to complete core tasks efficiently (both time and cost) and to grow productivity and capacity into the future. Progress on plant procurements is proceeding as planned with the exception of the EWR Wagons. Progress on the procurement of critical plant is outlined below:

- **Tamping machines**

  Tamping machines remain a significant constraint to the successful completion of renewal and upgrade works, and their lack of availability is leading to extended periods of continued TSRs – as evidenced through outcomes reporting. We note that all four sets of Tamper, Regulator & Stabilisers that are being procured have now had contracts awarded and deposits paid and are now in the design phase. Delivery of the four sets is not scheduled until between September 2025 (for sets 1 and 2) and March 2026 (for sets 3 and 4). This is driven by production and delivery times and remains consistent with the original schedule for delivery within the RNIP.

- **EM80 Track evaluation car (TEC)**

  We acknowledge the disruption that was caused to the Wellington metro network this year as a result of the lack of availability of the TEC and this incident highlighted the criticality of key plant. We look forward to supporting the outcomes of the Te Manatū Waka-led Rapid Review.

  A replacement TEC has featured in the RNIP since its inception and is now well into the procurement phase with tenders having closed in March 2023. Shortlisted suppliers have been identified and supplier workshops are

ongoing to work towards selection of a preferred supplier. The anticipated build time is expected to be between 24 to 36 months, with delivery and commissioning into service by 2026/27. This timeframe is in-line with the original schedule for delivery within the RNIP.

Through the Rail Network Growth Impact Management (RNGIM) project in Auckland, KiwiRail is also investigating alternatives to supplement the current TEC, that can carry out more continuous track inspections on the metro networks. The RNGIM project is not part of the RNIP, but as funder through the National Land Transport Programme (NLTP), Waka Kotahi continues to work with KiwiRail to ensure this critical piece of equipment is prioritised for delivery.

- **EWR Wagons**

  EWR wagons are used to transport and handle lengths of rail. They are critical for the distribution of material to and from the required locations around the rail network. Thirty EWR wagons are being procured through this RNIP and the request for tender process closed in April 2023. The award of contract award was delayed allowing time to fully evaluate and complete negotiations, with anticipated build completion in December 2024 and commissioning February 2025. This is a delay of one year compared to the original schedule for delivery within the RNIP, but warranted as the supplier workshop process that was run as part of the evaluation process will ensure the right products are procured and value for money is maximised. The advanced ordering of rail components can help in mitigating the impact of the delay, but it will constrain KiwiRail's ability to ramp up the rail renewal programme as quickly as planned. The national work train optimisation project (discussed later in this report) will also help to mitigate this delay to a certain extent.

31. Changes to planned lump sum plant payments ($7.6 million) have affected this years out-turn cost with the deposits for the EM80 replacement and EWR wagons now moved into 2023/24.

32. In addition to the planned plant procurements, KiwiRail has also procured a second-hand tamper from Japan which arrived into New Zealand in August 2023. This will go into service shortly. KiwiRail is investigating other opportunities to procure and mobilise plant quickly, but in general terms the narrow gauge and axle loads used in New Zealand means there is limited plant available which can be quickly and easily deployed here.

Recruitment of front-line and skilled staff has continued to progress well.

33. Significant levels of recruitment are required to deliver the RNIP. In our first Annual Report we noted that just over 80% of the planned intake of front-line staff had been achieved. This year a further 41 front line staff have been recruited. This completes the initial step up in resourcing and KiwiRail is currently sitting at 93% of roles filled across the full programme. KiwiRail is also assessing the additional staff required for the next RNIP and will commence recruitment early in the current triennium. The focus will be on Signal and Traction field technicians.

34. A more challenging issue is recruiting people with engineering and design skills for track work and signalling design. In our first Annual Report we noted that only 50% of the planned recruitment in this area has been completed and high calibre people were in significant demand. Recruitment is ongoing and the level of recruitment is up to 83%. Now that the borders have re-opened KiwiRail is able to supplement these specific skills (particularly signalling and traction) by bringing in expertise from overseas. It will take time for the additional capacity to be realised due to the significant amount of training required. KiwiRail did increase expenditure across the signals programme, largely due to a major replacement of KiwiRail's train control system that is underway.

Cost pressures and escalation remain a real issue and pose a threat to achieving programme outcomes.

35. Cost escalation remains a significant risk to the delivery of the 10-year programme, and we note it remains a 'very high' risk on the programme risk register. KiwiRail has estimated that the effect of inflation over the 10 years of the programme could be more than $500 million. If so, this would equate to the loss of at least one year's delivery.

36. Some current RNIP related cost pressures include:

- Rail costs increasing 39% since RNIP commencement, with sleepers increasing 22% and turnouts around 25%.
- Shipping costs have tripled through wider supply chain issues and the Ukraine war, increasing from around $70/MT to $210/MT, but noting it is starting to return to normal.
- The significant rail projects in Brisbane, Sydney and Melbourne are impacting costs and scarcity of materials.
- The cost of KiwiRail's annual insurance premium increasing significantly following the extreme weather events this year. The cost for insurance for 2023/24 (paid in June 2023) was 70% higher than budgeted.

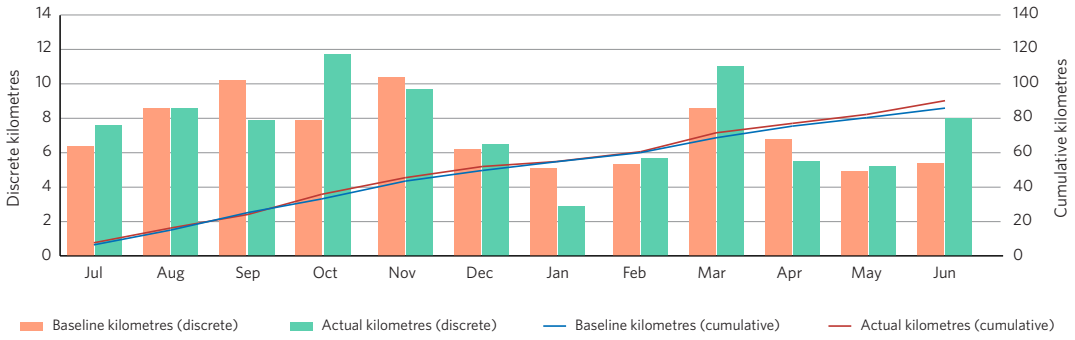
37. We are concerned that if further funding is not available, then current and future cost pressures will need to be managed by deferring renewals to remain within overall budgets. We will work with KiwiRail on this issue to manage as appropriately as possible and report any further risks as they emerge.

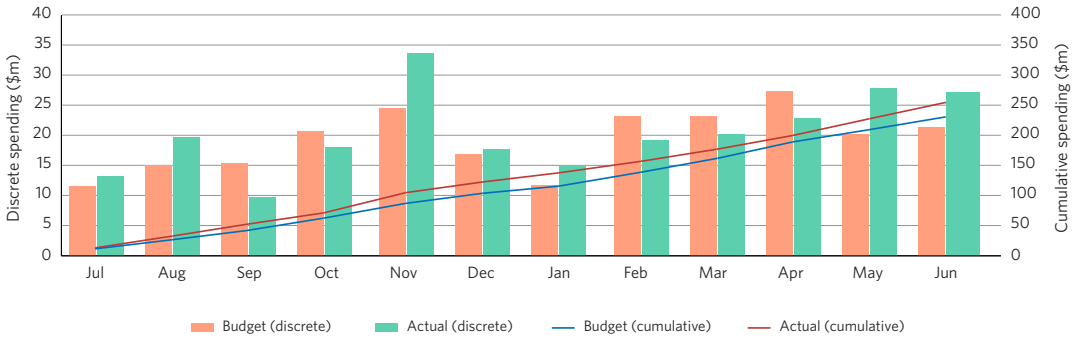
Renewal programme delivery

Freight network renewals delivery has been strong with track renewals exceeding targets

38. Within the overall renewals programme our main focus is the delivery of track renewals. This year's result was strong with a total of 90.3km of track and sleeper renewal being completed. This is 4.5km more than planned and targets for rerailing, resleepering and full track relays were all exceeded. This year's outturn is also an increase of 16% from 2021/22. Overall, this is an excellent result.

Figure 1: Track renewal kilometres against plan and expenditure against plan 2022/23



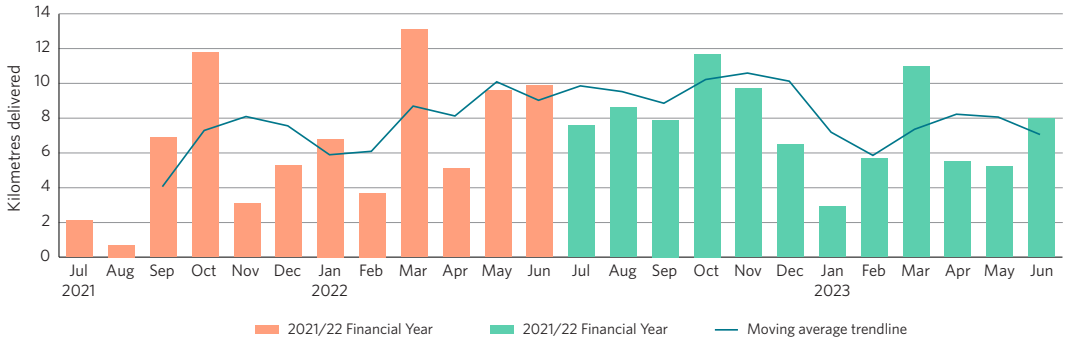


39. We have observed that the cost of renewals has increased this financial year. This increase is due to the high levels of cost escalation discussed above, but also the fact that KiwiRail is often undertaking additional work at each site meaning the quantity, and therefore cost, to renew each kilometre has increased.

40. The additional work includes unplanned formation repairs or associated minor works while completing planned works. The benefit of completing unplanned work is that KiwiRail is often addressing a root cause rather than just repairing damage. While undertaking this unplanned work may take slightly longer and have some additional cost it contributes to improved outcomes and increased track longevity.

41. Over the first two years of the RNIP KiwiRail has started to deliver a steadily growing monthly quantity of track renewals. While this growth appears to have slowed in the second half of 2023/23 it should be noted it is in line with the baseline profile and planned quantities were exceeded in both the first and second half of the year. This is demonstrated below. Monthly and seasonal variations in quantities are expected, but the overall trend can be seen as positive. It can also be observed how the early procurement of materials (made possible through the multi-year funding approach) enabled a much stronger start to Q1 2023/24, but conversely the impact of weather events in January and February 2023 caused some delays.

Figure 2: Track renewals delivered per month (km)



42. Overall renewals delivery has been strong in most asset classes as shown below. The civil elements of the programme were the most affected this year with design delays impacting progress on coastal and river protection, but noting the final result aligned with revised forecast presented at Q4. Structures were also impacted by design and consenting delays as noted elsewhere in this report. Delays due to issues with material availability impacted progress in active level crossings.

Table 3: Renewal volumes delivered for all asset classes 2022/23

A percentage complete in excess of 100% indicates delivering more than the planned volumes.

Key		
▲ Achieved or exceeded target	● Within 10% of target	▼ >10% below target

Asset	Actual	Annual Baseline	Status	Percentage complete
Total Track (km)	90.3	85.8	▲	105%
Turnouts (No.)	34	36	●	94%
Track Level crossings (No.)	35	31	▲	113%
Civils Formation/Drainage (km)	5.0	5.2	●	96%
Civils Coastal & River Protection (km)	1.7	4.3	▼	40%
Civils Structures (No. of projects)	19	26	▼	73%
Signals Cable Replacement (km)	23.1	21.5	▲	107%
Telecom Fibre Cable (km)	33.9	37.0	●	92%
Active Level Crossings (No.)	4	10	▼	40%

43. Design and consenting delays have impacted both the civils and structure elements of the renewals programme this financial year, again exacerbated by weather events. This will mean some planned structures works are deferred to the next RNIP period. KiwiRail is working on mitigations to these types of delays through their productivity programme which is discussed further in this report.

44. Again, programme management remained agile through a robust change control process, and delivery was optimised to respond to changes.

45. KiwiRail has begun to develop benchmarking across their renewal activities to support future programme costing and to demonstrate value for money. This will enable KiwiRail and Waka Kotahi to better understand the main drivers of expenditure across an agreed set of programme outputs (such as track renewals), to understand the reasons of changes from year to year, and to measure efficiency.

46. As is often the case, inconsistencies in data and the current limited sample size available are making comparisons difficult but work is ongoing. We have seen the initial benchmarking data and while further refinement is required, we are satisfied that progress is being made and the work to date is a good first step towards the desired result.

47. We consider that the development of a robust set of benchmarks is a matter of priority and recommend that KiwiRail progress this at pace to support the assessment of RNIP24-27, and that this should be complemented with further work to increase project and programme delivery maturity and cost analysis.

Challenges remain in the affordability, funding and delivery of metro network renewals

48. While the renewals programme for the freight network has progressed well, issues remain in the two metro networks. In the metro networks routine renewal (and maintenance) costs are shared between central and local government, based on network usage, and under the overarching principle that the cost of maintaining the network is recovered from the users of network.

49. The RNIP stated a proposed level of renewal (and maintenance) activity in the two metros, and also stated the proposed amount to be contributed by councils. We note that these were still to be finalised through the Network Access Agreement process, and the development of more comprehensive maintenance methodologies and costs did not align with local government budgeting cycles.

50. Since the publication of the RNIP, KiwiRail has increased their estimates of the quantity and cost of renewal (and maintenance) activity in both metros to reflect updated asset condition information, additional testing for Rail Contact Fatigue (RCF), inflation and other cost pressures (e.g. insurance). This added increased pressure on councils' ability to budget and pay and has led to a significant shortfall in the actual contribution compared to what was finally requested.

51. While the late changes and subsequent cost increases have contributed to this shortfall, it is compounded by the councils advising they are unable to pay their share through rates funding, even at the initial (lower) level to achieve the desired service level.

Table 4: Metro network funding shortfalls

		2021/22	2022/23	2023/24
Auckland Transport proposed share	RNIP (original)	$34.2	$34.9	$41.8
	RNIP (revised request)	$30.8	$46.1	$62.7
	Auckland Transport (confirmed)	$27.3	$32.4	$34.5
	Shortfall (to revised) (cumulative)	$3.5	$13.7	$28.2
Greater Wellington Regional Council proposed share	RNIP (original)	$43.1	$45.8	$46.6
	RNIP (revised request)	$32.9	$46.0	$73.4
	Greater Wellington (confirmed)	$32.9	$32.7	$34.1
	Shortfall (to revised) (cumulative)	$0.0	$13.3	$39.4

52. When coupled with KiwiRail's corresponding reduction to the planned programme, the shortfalls noted above will lead to a total of $80 million of necessary renewal and maintenance work being deferred during this RNIP period. This highlights the criticality of reviewing the cost share, incentive, and affordability aspects within the Metro Rail Operating Model. Waka Kotahi continues to work with the Te Manatū Waka, KiwiRail and other rail participants to prioritise this work to enable the metro networks to be maintained to modern metro network standards. We note that when the Wellington increased peak frequency (RS1) and Auckland CRL Day One timetables are in place the passenger share of these costs will increase further, adding further pressure on local government funding.

The Asset Management Continuous Improvement Programme (CIP) is being delivered as planned and evidence of increasing asset management maturity is visible.

53. The CIP is progressing, and we remain satisfied that the initiatives identified in the CIP will go a long way to resolving many of the issues identified in our initial RNIP assessment and advice. The Lead Asset Management Advisor from Waka Kotahi and KiwiRail's General Manager Asset Management are in regular contact and share knowledge and support each other to increase both organisations' asset management maturity.

54. While recruitment of staff has been successful there are still a number of positions vacant. The market remains highly contested for skilled asset management roles. KiwiRail is working on a refreshed and more targeted recruitment approach.

Table 5: Asset Management Continuous Improvement Programme – progress against specific deliverables for 2022/23 (and for deliverables not fully complete in 2021/22)

Focus Area	Initiative	Status	Commentary
Asset Management Strategy	Asset Management Policy	Complete	Approved by Executive Capital Committee (ECC)
	Asset Management Framework (final draft)	In progress	To be approved in Q1 2023/24
	Strategic Asset Management Plan (Rail Network)	Complete	Approved by ECC
	Asset class strategies	Complete	All asset class strategies approved by KiwiRail's internal RNIP Governance Board
Asset Management Plan and Investment Planning	Planning Guide (2nd version)	In progress	To be approved in Q2 2023/24
	3-year Forward Works Programme (2nd draft)	In progress	Expected to be complete by October 23
	Rail Network Asset Management Plan (2nd draft)	In progress	Expected to be complete by October 23
Works Delivery	Work Delivery Management Manual	Complete	Approved by KiwiRail's internal RNIP Governance Board
	Implementation of New Works Delivery Management Processes.	In progress	Implementation will be phased across the regions throughout 2023/24
Asset Information	Deliver Tranche 1 of Data Quality Improvement Project	In progress	Data quality dashboards are being used by the business to improve data completeness and timeliness
	Develop Asset Information Framework	In progress	RACI chart and governance model defined in the Asset Management Strategy. Governance body will be established by the end of Q2 2023/24
	Asset Information Strategy	Complete	Approved by KiwiRail's internal RNIP Governance Board
	Updated condition records (currency and completeness) for critical asset classes (carried over from 2021/22)	Ongoing	Track condition records continue to be updated with the average age stabilised at around 2 years.

55. We are already seeing the benefits of the improved CIP deliverables. We have now received KiwiRail's Strategic Asset Management Plan and Asset Class Strategies to support their RNIP 2024–27 submission.

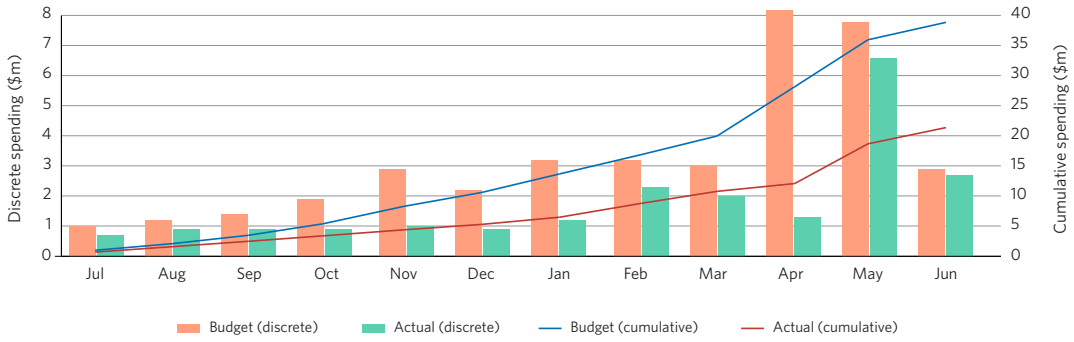
56. We also note that KiwiRail will be commissioning AMCL (an asset management specialist consultancy) in 2023/24 to conduct a second Asset Management Maturity Assessment. We look forward to the updated assessment results to understand KiwiRail's asset management maturity progression.

The delivery of metro improvement projects has been mixed with some delays experienced.

57. At commencement of the year KiwiRail were forecasting $38.9 million of expenditure on the metro projects in the RNIP. Within that forecast, two projects represented almost 80% of the total expenditure – the Auckland Integrated Rail Management Centre and the Auckland Additional Power Feed.

58. Delays and changes were experienced on several metro improvement projects which has led to a final out-turn for the year of $21.4 million (45% under original estimates). Projects with more significant variances or changes are discussed below, with commentary on all activities in Appendix B.

Figure 3: Metro improvement projects expenditure against plan 2022/23



Auckland Projects

59. The Integrated Rail Management Centre is now well into construction and is progressing well. Progress on site has been strong with the concrete frame and roof complete, façade 75% complete, and services installation and partitioning commenced. Expenditure this financial year was below the amount originally forecast due to lower contractor fixed costs, lesser payments for early materials procurement than expected, re-scheduling of training for train controllers, and no requirements for forecast contingency. Waka Kotahi continues to be a member of the project steering group and we remain confident that the project is well managed and on-track for successful delivery.

60. The Additional Power Feed project has experienced some delays due to extended negotiation times on key contracts. These are now complete with contracts awarded for the Static Frequency Converter (SFC) (which supplies the power from the grid to the railway), switchgear (to control the power system), and cabling contracts. The SFC construction start was also delayed due to a delay in the supply of the unit from offshore. These factors have driven the variance to budget this year pushing cost into 2023/24 and will now impact the overall project delivery timing meaning a carry-over into the 2024-27 period. The project is still expected to be completed to support the CRL Day One services.

Wellington Projects

61. In Wellington the most significant project, the Rail Network Resignalling, is behind original plan. This is largely due to staff and contractor availability – with the capacity improvements project and work on the Wellington New Zealand Upgrade Programme projects taking priority. Focus will now shift to this project and the overall timeline has been amended meaning a significant carry-over into 2024-27.

Programme level risks and issues have been well identified and mitigations are effective.

62. KiwiRail continues to manage RNIP delivery risks and report them to Waka Kotahi as part of monthly and quarterly reporting. We consider that these documents cover the relevant delivery risks and issues and have suitable mitigation plans in place. The risks consider the wider KiwiRail works portfolio in their assessment and management. The most significant risks include:

- Renewals activity delayed due to a disrupted supply chain (particularly now in the signals and structures area) impacting the delivery of works. (Raw material shortage in China and Australia impacting material availability and Australian port workers nationwide strike).
- Design delays due to diversion of resources onto emergency weather events leading to a backlog of design work.
- Increased level of incidents due to effects of climate change leading to increased network risk, reduced network availability and reduced resource availability (e.g., people and wagons) due to diverting resources to dealing with incidents.
- Cost escalation (labour, materials, and shipping) meaning KiwiRail is unable to deliver renewals at estimated cost.
- Lack of availability of specialised plant to meet the demands of the targets within the RNIP, and to complete all re-scheduled work.

63. We are continuing to work with KiwiRail on mitigations, and ways to maximise the opportunities that the multiyear funding provides.

64. Commentary on the progress of individual activities is shown in Appendix B.

Part 3: Confirming contribution to LTMA and consistency with GPS

65. Under section 22C of the LTMA, Waka Kotahi is required to consider whether the RNIP:

- contributes to the purpose of the LTMA (to contribute to a safe, efficient and effective land transport system)
- is consistent with the Government Policy Statement on land transport.

66. We have completed an updated assessment which reconfirms that the activities contained in the RNIP contribute to an effective, efficient, and safe land transport system in the public interest through restoring the rail network to a resilient and reliable state. We consider that the proposed investments will:

- support mode shift that reduces pressure on the wider land transport network
- improve the movement of people in our largest metro centres in an efficient and effective way.

67. The GPS 2021 sets out delivery of the Rail Plan as a Government commitment to be met through NLTPs. We consider that the activities included in the RNIP are consistent with the investment priorities set out in Section Two (Strategic priorities for Rail) of the Rail Plan.

68. Our updated assessment can be found in Appendix C.

Part 4: Update on findings and recommendations from 2021/22 Annual Report

Uncertainty around the costs of delivering RNIP activities and robustness of 10-year forecast

69. We noted that the cost estimates contained in the RNIP were based on KiwiRail's experience of historic cost data for similar work, supplemented by local knowledge of site-specific issues. Work is progressing on improving base levels of cost data and we expect to see the results of ongoing cost benchmarking to support RNIP 2024-27.

70. Based on this year's delivery, KiwiRail has updated their 3-year estimated cashflow. This now shows an expected underspend and carryover into 2024-27 of between $65 and $115 million (an update and tightening from last year's forecast which was between $85 and $170 million). This reflects the project delays identified earlier in this report. This will reduce if KiwiRail transfers funding from renewals to maintenance, management and operations to help mitigate the cost pressures noted above.

71. While not included in the RNIP, we are still experiencing severe cost increases on the projects funded during 2018-21 through the Transitional Rail activity class. The catch-up renewal and capacity improvement projects in both metros still have further cost and scope adjustments under assessment and, if approved, would see the Auckland project over 200% higher than its original estimate, and the Wellington projects 160% higher than their original combined estimates. As noted in previous advice to you, there is pressure on the National Land Transport Fund (NLTF) to deliver the Government's transport priorities as set out in GPS 2021, particularly through the Public Transport Infrastructure Activity Class which is where these projects are now funded.

Ability to deliver the programme

72. This has been a strong year for KiwiRail, particularly in freight network renewals delivery. However, the availability of specialist resources and plant is still hampering delivery capacity and impacting KPIs. KiwiRail has made every effort to mitigate these issues as much as possible and continues to build capacity and capability with this being year 2 or a 10-year programme.

Overarching Productivity Programme

73. As part of our annual review of 2021/22, we asked KiwiRail to develop an overarching productivity and efficiency programme. The purpose of this programme is to identify and implement a suite of initiatives that could improve the cost effectiveness and predictability of delivery across the wider programme.

74. KiwiRail has developed several initiatives as part of this programme. Many of the ongoing initiatives capitalise on the improved certainty of funding that comes with the RNIP and include:

- Supply chain initiatives
  - optimising procurement and delivery of materials through bulk purchasing of plant and materials
  - increased order volumes have incentivised manufactures to increase production of rail components, helped improve the relationship between KiwiRail and the supply chain, and enabled a smoother delivery of components throughout the year
  - over the next two years, KiwiRail will investigate opportunities to bring procurement into New Zealand enabling a more resilient supply chain, reducing cost, decreasing lead times, and promoting New Zealand employment – e.g., glued Insulated Joints now being manufactured in New Zealand rather than Australia reducing lead time from 4-5 months to less than one month
- National work train optimisation
  - increased visibility and planning across KiwiRail and the supply chain leading to reduced cancellations due to timetable conflicts of around 20%, and due to wagon maintenance requirements of a further 10%
- Integrated planning approach
  - aligning multi-discipline workstreams so that current works cater for future planned works – e.g., laying ducting for planned future improvements while undertaking routine works
- Standard designs
  - developing a library of standard designs to enable quicker delivery and reduced costs. Anticipated to reduce design and consenting lead times by up to 50%
- Increasing competition
  - KiwiRail has introduced a signalling system called HIMA which reduced their reliance on a single signalling system supplier. The use of HIMA is expected to deliver savings and reduce signalling design times by six months
- Use of technology
  - Use of VR to train/re-train staff in use of Infrastructure wagons. This reduces the reliance on availability of wagons and reduces time to revalidate staff.

75. Waka Kotahi support these initiatives and we continue to strongly encourage KiwiRail to develop further initiatives driven by data, technology and innovation to better understand the condition of their assets, reduce waste, improve customer satisfaction, and increase value.

Section 4: Other issues

Rail Safety Regulator perspective

76. In addition to working with KiwiRail, Auckland Transport (AT) and Greater Wellington Regional Council to fund the rail network, we have primary regulatory responsibility for rail safety in New Zealand under the Railways Act 2005. Our role is to provide independent assurance to stakeholders and the public of the effective management of rail safety risks by rail participants.

77. Section 104A of the LTMA creates a Director of Land Transport role within Waka Kotahi, reinforcing the independence of the regulatory functions that we are responsible for.

78. As the independent safety regulator, we are impartial to funding sources but welcome seeing additional funding that will help rail participants contribute to a safer rail system through maintenance, replacement or new infrastructure, works and equipment. This RNIP reaffirms commitments to rejuvenate New Zealand's rail network that has historically suffered from years of under-investment. We look forward to working with KiwiRail as the projects within this investment programme are scoped and delivered.

79. We have an expectation that safety criteria and legislative requirements are considered in the design stage of projects, in order to maximise safety benefits and investment outcomes. Once an asset is built, the safety risks arising from the asset must be managed for the asset's lifetime. The more safety risks that can be engineered out of an asset during its design and construction, the safer the asset will be.

80. Working with the relevant stakeholders, we will continue to develop and implement processes for identifying and managing system risk. Alongside this, we will be ensuring the requirements of the Railways Act 2005 are being met, including that rail participants, and in particular rail licence holders such as KiwiRail, are managing safety risks effectively and meeting the 'so far as is reasonably practicable' test, including during the design and build phase.

81. Our regulatory strategy Tū ake, Tū maia, sets out the strategic intent of our regulatory model, and the capability shifts required to be a real-world regulator. This journey is well underway, and we will continue to work with KiwiRail in the spirit of our Te Ao Māori principles in the next phase as they seek to establish a reliable and resilient network.

KiwiRail procurement procedures

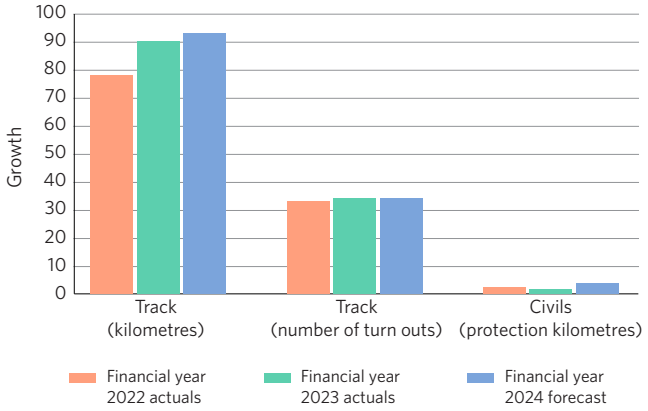
82. No updates to the KiwiRail procurement manual were notified.

Section 5: Looking Forward to 2023/24

Programme Delivery and Funding

83. The final year of the first RNIP sees a further planned increase in the quantity of track renewals of 3% when compared to the actual result from 2022/23. There is also a larger planned increase in civils works which will be challenging noting the resource constraints mentioned above. A corresponding increase in renewals expenditure supports these increases and based on achievements to date we consider these are achievable targets.

Figure 4: Actual and planned renewal quantity growth



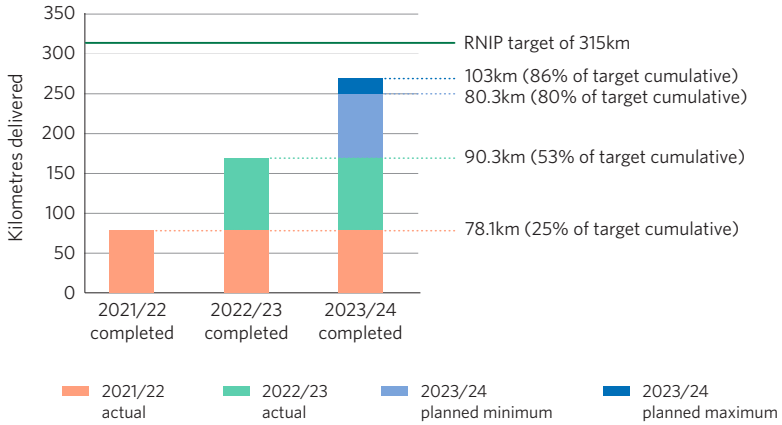
84. There is also a significant increase in activity and expenditure for the public transport infrastructure projects from $21.4 million to a forecast $68.7 million. While this is a significant uplift, we acknowledge that all projects are all now in the implementation phase, so we consider this challenging but achievable. We will continue to work closely with KiwiRail on any ways we can assist them in delivering these targets. Again, 70% of the total is within the Western Power Feed and Integrated Rail Management Centre projects.

85. While we have noted above that all RNIP activities are now funded, the Extreme Weather Recovery Cabinet Committee have now released the tagged contingency for the Cyclone Gabrielle recovery works required in 2023/24. This will now be formally added to the RNIP, and we note this will add a significant amount of work to the annual work bank and may pose a risk to deliverability.

Specific measures and targets to be delivered by June 2024

86. The proposed three-year programme should see a total of between 250km and 270km of track renewal completed. For the first RNIP period, the planned target for track renewal was 315km. While the initial target will not be achieved, we note sustained increases have been delivered and are planned year on year, and that a minimum of 80% of the target should be achieved. This should not take away from huge effort that has been put into delivery, and the fact that KiwiRail continues to deliver at levels never before achieved.

Figure 5: Track renewals progress towards target for RNIP21-24



87. The focus of the first RNIP is on foundational infrastructure with several specific targets to deliver improved asset condition on priority network routes, and improved asset management maturity and data quality to support decision making. These are the first steps in shifting to a resilient, reliable and safe network.

Table 6: Assessment against RNIP21-24 targets with one year remaining, based on actual results to 2022/23.

Key		
▲ Strong	● Needs focus	▼ Improvement required

Measure	Target	Assessment (Based on results to end 2022/23)
All temporary speed restrictions (average TSRs) within target(s) for priority routes	100% within target(s) by 2024	▼ TSRs on priority routes have consistently failed to meet targets and have worsened due to the disruption from renewals and upgrades across the network and weather event impacts.
All temporary speed restrictions (average TSRs) stabilised for secondary routes	100% within target(s) by 2024	▼ TSRs on secondary routes have failed to meet targets although have improved. Disruption remains from renewals and upgrades across the network and weather event impacts.
All Heat 40s (average Heat 40s) within target(s) for priority routes	Increasing to 100% within target(s) by 2024 2021/22: 80% – actual 90% 2022/23: 90% – actual 80% 2023/24: 100%	● Heat 40s on priority routes have either met or been within 10% of target to date although have worsened.
All Heat 40s (average Heat 40s) stabilised for secondary routes	Increasing to 100% within target(s) by 2024	▲ Heat 40s on secondary routes have consistently met target to date.
Mainline derailments due to infrastructure defects	5 average p.a. by 2024 2021/22 – actual 1 2022/23 – actual 2	▲ Mainline derailments have consistently remained below target to date.
Track Quality Index (average TQI) within target(s) for priority and secondary routes	Increasing to 100% within target(s) by 2024 2021/22: 90% – actual 80% 2022/23: 95% – actual 85% 2023/24: 100%	● Track Quality Index has consistently improved but remains behind target.
Sleeper condition on priority routes	100% of condition 5 sleepers addressed by 2024 2021/22: 20% – actual 31% 2022/23: 55% – actual 65% 2023/24: 100%	▲ Progress to date ahead of baseline and well on-track to achieve target.
Rail condition non-destructive testing (NDT) fault/defects on priority routes	<6 per km by 2024 2021/22 actual 10 2022/23 actual 10	▼ NDT faults have not improved. (We note a single 1km section in the North Island Main Trunk in Hamilton South significantly impacted the result this year).

Measure	Target	Assessment (Based on results to end 2022/23)
Rail condition on priority routes	100% of condition 5 rail addressed by 2024 2021/22: 60% – actual 26% 2022/23: 80% – actual 84% 2023/24: 100%	 Condition 5 rail now ahead of plan.
Structures risk reduction	Priority structures delivered to plan by 2024 2021/22: 10% – actual 6% 2022/23: 67% – actual 24% 2023/24: 100%	 Structures work has consistently failed to meet targets due to design and consenting delays, and further impacted by weather events.
Network congestion assessment (Rail network congestion is defined as reaching capacity on a section of the rail network to the point that following services are impacted more than would be expected during a normal operating day. The level of congestion refers to the degree of impact to following services and the time it takes to recover to the normal timetable).	Completed by June 2023	 In 2022/23 no regular congestion was experienced on the freight network, but some major yards have experienced limited congestion during. On the Auckland and Wellington Metro networks, commuter train frequencies have been busy during 2022/23, but no persistent congestion was observed.
Number of level crossings in service	Decreasing number of level crossings by June 2024 2021/22: actual 5 less 2022/23: actual additional 5 less	 Level Crossings have consistently met target to date.
Yard asset improvement business case	Completed by June 2023	Preferred programme identified although full business case not yet complete.
Resilience improvement business case	Completed by June 2023	Preferred programme identified although full business case not yet complete.
Deliver long term 30-year network development plan	Completed by June 2024	 The 30-year network plan is on track for completion to support RNIP24-27.

88. There are a number of areas where KiwiRail will need to focus on in the final year of this RNIP. They relate to all temporary speed restrictions (priority and secondary routes), rail condition faults and defects, track quality and structures risk reduction. Some KPIs such as temporary speed restrictions are likely to continue to impact the network over the next year until major renewals and upgrade works are complete and the tamper replacements arrive. Despite this, KiwiRail is expecting improvement over the next year, but below the original RNIP targets.

Appendix A: Summary of RNIP approvals to date

- On 29 June 2021 the Minister of Transport approved KiwiRail's first RNIP after considering advice from Waka Kotahi and consulting with KiwiRail's shareholding Ministers. At that time, the Minister:
  - approved, in accordance with section 22B of the LTMA, the RNIP at a maximum contribution from the NLTF of $1,351.7 million
  - approved, in accordance with section 22F of the LTMA, funding from the NLTF for eight of the eleven activities in the RNIP that were ready for approval at a total of $1,270.7 million
  - noted, further planned approvals would be requested during the 2021-24 period, in accordance with section 22F of the LTMA, for activities that were not ready for approval at that time.
- Subsequently, on 27 January 2022, the Minister approved, under section 22F of the LTMA, two further activities increasing the total of activities approved to $1,328.7 million.
- Finally, on 21 May 2023, the Minister approved, under section 22F of the LTMA, all remaining activities within the RNIP, and approved, under section 22D of the LTMA, the first variation to the RNIP to include a new activity to reinstate critical rail infrastructure that was damaged during Cyclone Gabrielle and the Auckland Anniversary Floods, and to commence the North Island Main Trunk electrification business case.
- All RNIP activities are now fully funded, and the maximum contribution from the NLTF is $1,385.2 million. There is an increase of $33.5 million against the original RNIP allocation reflecting:
  - the reduction in the estimate for the Infill Signalling activity of $10.5 million (from $15 million to $4.5 million)
  - the addition of the Emergency Works activity of $40 million
  - the addition of the North Island electrification business case of $4 million.

Table 7: Summary of RNIP approvals to date

#	Region	Activity	Phase	Activity Class	RNIP as at July 2021 ($m)	RNIP Current approved funding ($m)	Commentary on variance
1	National	Freight Network Renewals	Implementation	Rail Network	789.9	789.9	
2	National	Freight Network Maintenance and Operations	Implementation	Rail Network	361.0	361.0	
3	National	Freight network improvements	Business Case	Rail Network	49.5	53.5	Includes 2023/24 costs for North Island electrification DBC
4	Auckland	Additional Traction Feed (West)	Implementation	PT Infrastructure	57.0	57.0	
5	Auckland	European Train Control System Upgrade	Business Case	PT Infrastructure	4.0	4.0	
6	Auckland	Integrated Rail Management Centre	Implementation	PT Infrastructure	35.7	35.7	
7	Auckland	Metro Infill Signalling	Business Case and Implementation	PT Infrastructure	15.0	4.5	Reduced cost estimate based on preferred option
8	Auckland	Progressive fencing and security	Business Case and Implementation	PT Infrastructure	6.0	6.0	
9	Auckland	KiwiRail Strategic Future Planning	Implementation	PT Infrastructure	12.0	12.0	
10	Wellington	Wellington Rail Network Re-signalling	Business Case	PT Infrastructure	20.6	20.6	
11	Wellington	Wellington Network Capacity Improvements	Business Case	PT Infrastructure	1.0	1.0	
12	National	Cyclone Gabrielle Emergency Works	Implementation	Rail Network	0.0	40.0	RNIP varied to include new activity
		TOTAL NLTF			**1,351.7**	**1,385.2**	
12	National	Cyclone Gabrielle Emergency Works	Implementation – tagged contingency funding 2023/24	Rail Network	0.0	160.0	Tagged contingency funding 2023/24

Appendix B: Commentary on the progress of individual activities

Delivery of Continuous Programme – Freight and Tourism Network

Table 8: Freight and Tourism Network – Summary of progress and commentary on all activities

Key		
▲ Proceeding as planned	● RNIP outcome secure, but risks or delays experienced	▼ Overall outcome at risk, or major variance to plan deferring into RNIP 2024–27

Region	Activity	Phase	Delivery metrics			Cost			Commentary and Indicator		
			2022/23 Targets (significant metrics only)	2022/23 Actual	2022/23 Variance	2022/23 Funding ($m)	2022/23 Actual ($m)	2022/23 Variance ($m)		2022/23	RNIP 2021–24
National	Freight Network Renewals	N/A	Track Renewal: 85.8km Rerail: 37.8km Resleeper: 38.7km Relay: 9.2km	Track Renewal: 90.3km Rerail: 38.9km Resleeper: 42.0km Relay: 9.3km	+4.5km (+5%)	$231.0	$255.1	+$25.1 (+10%)	Delivery has been strong with track renewals delivery exceeding target, and a step-up compared to the previous year. This year's financial out-turn was slightly overbudget, but largely due to cost escalation issues and the completion of additional works as noted within this report. Rescheduling of works has been successful to optimise around disruptions caused by weather events.	▲	▼
			Turnouts: 36	34	-1 (-6%)						
			130 projects to reach implementation phase or complete	138 projects in implementation or complete	+8 projects (+6%)						

Region	Activity	Phase	Delivery metrics			Cost			Commentary and Indicator		
			2022/23 Targets (significant metrics only)	2022/23 Actual	2022/23 Variance	2022/23 Funding ($m)	2022/23 Actual ($m)	2022/23 Variance ($m)		2022/23	RNIP 2021-24
									The forecast overspend was notified early and can be accommodated using the surplus funds from the previous year's underspend. (i.e. it is effectively a catch up). Design delays have impacted Civils and Structures work and will continue to impact for the remain-der of this RNIP period with some planned structures works now deferred to the next RNIP period. Delays in plant deposit payments impacted the quarter with the deposits for EM80 and EWR wagons now moved into 2023/24 due to delays in tender evaluations. RNIP21-27 indicator remains red as activity and funding remains deferred into 2024-27, but we note the expected deferral has reduced.		

Region	Activity	Phase	Delivery metrics			Cost			Commentary and Indicator		
			2022/23 Targets (significant metrics only)	2022/23 Actual	2022/23 Variance	2022/23 Funding ($m)	2022/23 Actual ($m)	2022/23 Variance ($m)		2022/23	RNIP 2021-24
National	Freight network Maintenance and Operations	N/A	Outstanding Service Requests: 5% reduction	26.4% reduction	+21.4%	$120.0	$130.6	+$10.6 (+9%)	Targets have been achieved in relation to this activity. However, the financial outturn has exceeded budget. This has been largely driven by increasing insurance premiums (70% higher) which required payment in June for the 2023/24 financial year. There is a risk that in order to internalise these ongoing funding pressures (such as any further increases in insurance costs and cost escalation), this will be managed in the longer term by deferring or reducing the scope of renewals which may jeopardise the overall outcomes of the programme.		
			Inspection Hours: (maintain increased target of 74,712 hrs)	75,530 hrs	+818 hrs (+1%)						
			Cyclone Gabrielle emergency works	N/A	N/A	$40.0	$26.9	-$13.1 (-33%)	While actual expenditure was below the amount of funding approved progress has been strong on the response and moving into recovery. A proposal for reinstatement of the effected lines has been presented to Government for consideration.		
National	Freight network improvements	N/A	Programme Business Cases complete	Business cases in development but behind plan		$19.6	$21.8	+$1.8 (+9%)	While the full business case documents are not yet complete, preferred programmes have been identified. This will be presented to Waka Kotahi in 2023/24 and to support future planning and input into the development of the RNIP 2024-27.		

Delivery of Metro Network Improvement Projects

Table 9: Metro Improvements – Summary of progress and commentary on all activities

Key		
▲ Proceeding as planned	● RNIP outcome secure, but risks or delays experienced	▼ Overall outcome at risk, or major variance to plan deferring into RNIP 2024–27

Region	Activity	Phase	Delivery metrics		Cost			Commentary and Indicator		
			2022/23 Targets (significant metrics only)	2022/23 Actual	2022/23 Funding ($m)	2022/23 Actual ($m)	2022/23 Variance ($m)		2022/23	RNIP 2021–24
Auckland	Additional Traction Feed (West)	Implementation	Construction in progress	Construction in progress but behind schedule	$13.6	$7.5	-$6.1	With all commercial negotiations and pricing complete we have increased confidence that no additional funding will be required. The design process is now complete. However, due to a delay in the supply of the Static Frequency Converter from overseas construction start was delayed until June. The impact of the delay has meant the programme will extend into the next RNIP period, with completion now scheduled for January 2025.	●	▼
Auckland	Integrated Rail Management Centre	Implementation	Construction in progress	Construction in progress	$16.1	$7.4	-$8.7	Despite a variance in cashflow to plan, work is progressing well with the construction of the new Integrated Rail Management Centre. The project remains on track to complete and open within the RNIP period, and a $2 million surplus is expected.	●	▲
Auckland	Metro Infill Signalling	Implementation	Funding Approved	Funding Approved	$0.7	$0.7	$0.0	Work is progressing as planned with funding release for the implementation phase.	▲	▲
Auckland	Progressive fencing and security	Implementation	Implementation	In implement-ation, but slightly behind schedule	$2.0	$0.5	-$1.5	An overarching business case has been developed and early win sites have been identified and works have commenced. Request for proposals for further packages slightly delayed due to internal resource constraints. There have also been delays in getting site access.	●	●

Region	Activity	Phase	Delivery metrics		Cost			Commentary and Indicator		
			2022/23 Targets (significant metrics only)	2022/23 Actual	2022/23 Funding ($m)	2022/23 Actual ($m)	2022/23 Variance ($m)		2022/23	RNIP 2021–24
Auckland	KiwiRail Strategic Future Planning	Implementation	Implementation	Proceeding to plan	$3.2	$3.7	+$0.5	This activity enables KiwiRail to perform its role as the lead for planning and delivery of rail projects across Auckland. This includes undertaking initial work on a range of upcoming projects strategic thinking on long-term requirements (e.g., potential future Ports of Auckland move and the impact on the rail network) as well as KiwiRail's input into initiatives led by others – for example, Auckland Light Rail, and second Harbour Crossing. Actual costs this year exceeded estimate, making use of an underspend from last financial year.	▲	▲
Auckland	European Train Control System Upgrade	Business Case	N/A	Ahead of schedule	$0.0	$0.0	$0.0	While there is no expenditure against this activity, the release of funding has been completed slightly earlier than planned. This will enable good integration with other related activities (Metro Infill Signalling, and Wellington Network Re-signalling).	▲	▲
Wellington	Wellington Rail Network Re-signalling Renewal	Business Case	Detailed Business Case commenced	Behind schedule	$2.1	$0.7	-$1.4	The project remains significantly behind the overall schedule due to constraints in obtaining key resources and competing priorities of other activities. Key roles have now been recruited including a project manager and operations specialist. The system integration consultant has also been engaged. We anticipate a significant uplift in activity in the 2023/24 year.	●	▼
Wellington	Wellington Network Capacity Improvements	Business Case	Business Case submitted	Business Case submitted	$1.0	$1.0	$0.0	The capacity improvement study is now complete. This work has informed a number of wider activities including Greater Wellington Regional Council's programme business case and Lower North Island Rail Integrated Mobility.	▲	▲

Appendix C: Contribution to the LTMA purpose and consistency with the GPS

Table 10: RNIP activities contribution to the LTMA purpose and consistency with the GPS

Title of activity or combination	Overview	Contributes to the LTMA purpose and is consistent with the GPS
Freight network renewals	Continuous programme of renewal work on the national freight network	Activity contributes to the LTMA purpose because investing in rehabilitation of the national rail network will enable it to operate more effectively, efficiently and safely. Activity aligns to the Improving Freight Connections strategic priority in the GPS.
Freight network maintenance and operations	Continuous programme of maintenance work, along with funds to purchase new plant and equipment	Activity contributes to the LTMA purpose because investing in rehabilitation of the national rail network will enable it to operate more effectively, efficiently and safely. Activity aligns to the Improving Freight Connections strategic priority in the GPS.
Freight network improvements	Funding requested mainly to develop business cases for minor improvements to the national freight network, with some constructing beginning in 2023/24. This now includes the NI Main Trunk electrification business case.	Activity contributes to the LTMA purpose because investing in rehabilitation of the national rail network will enable it to operate more effectively, efficiently and safely. Activity aligns to the Improving Freight Connections strategic priority in the GPS.
Additional Traction Feed (West)	Installation of an additional grid exit point and traction power feed to the Auckland rail network.	Activity contributes to the LTMA purpose by enabling the Auckland rail network to operate more efficiently/effectively. Aligns to the Better Travel Options strategic priority in GPS 21/31.
Auckland Metro Network – ETCS Upgrade	Upgrade of the Auckland metro train control system to Level 2.	Activity contributes to the LTMA purpose by displaying signalling and movement authorities in the train cab, improving safety and optimising train movements on the network. Activity aligns to the Better Travel Options strategic priority in GPS 21/31.
Integrated rail management centre and emergency management systems	Establishing the Integrated Rail Management Centre (IRMC) in Auckland.	Activity contributes to the LTMA purpose by providing for greater resilience in national train control functions. Should an event affect Wellington, the IRMC in Auckland will be able to carry out these functions. Activity aligns to the Better Travel Options strategic priority in GPS 21/31.

Title of activity or combination	Overview	Contributes to the LTMA purpose and is consistent with the GPS
Auckland Metro Infill Signalling	Investment in improvements to the existing European Train Control System (ETCS) Level 1 rail signalling system to make the Auckland rail network better capable of supporting the level of service and performance required when the Auckland City Rail Link (CRL) opens.	Contributes to the LTMA purpose because adding signalling capacity allows for more efficient operation of the network. Without these additional signals, the full benefits of the CRL project cannot be realised. Aligns to the Better Travel Options strategic priority in GPS 21/31.
Progressive fencing and security	Fencing across the network does not currently meet requirements and progressive investment to address this is required.	Contributes to the LTMA purpose through increasing the safety and security of rail yards to ensure that the network can operate in an efficient, safe and secure manner – including guarding against track incursions. Aligns to the Better Travel Options strategic priority in GPS 21/31.
KiwiRail Strategic Future Planning	Funds to support KiwiRail to undertake strategic planning for future investments in the Auckland network.	Contributes to a more effective and efficient network by providing funding to ensure that rail projects are considered within the broader transport and land use planning context. For example, this funding will enable KiwiRail to better integrate with ATAP, the Strategic Growth Alliance, the Regional Land Transport Committee and other planning forums in and around Auckland. Aligns to the Better Travel Options strategic priority in GPS 21/31.
Wellington Rail Network Resignalling Renewal	Renewal of the Wellington Metropolitan Rail Network Resignalling and Train Control System to a modern, safer and more operationally flexible system	Activity contributes to the LTMA purpose by enabling the Wellington metro network to operate in a safer and more operationally flexible way. Aligns to the Better Travel Options strategic priority in GPS 21/31.
Wellington network – further capacity improvements	The overall programme considers the replacement of all existing longer-distance rail rolling stock on the Wairarapa and Manawatu lines, with supporting improvements to maintenance facilities, stations and network infrastructure. KiwiRail is responsible for network infrastructure portion.	Activity contributes to the LTMA purpose by enabling the Wellington metro network to operate in a safer and more operationally flexible way. Aligns to the Better Travel Options strategic priority in GPS 21/31.
Cyclone Gabrielle emergency works and recovery	Immediate work to reinstate critical rail infrastructure that was damaged during Cyclone Gabrielle and the Auckland Floods.	Activity contributes to the LTMA of an effective, efficient, and safe land transport system in the public interest and that the requirements of section 20 have been met. Activity aligns to the Improving Freight Connections strategic priority in the GPS.

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