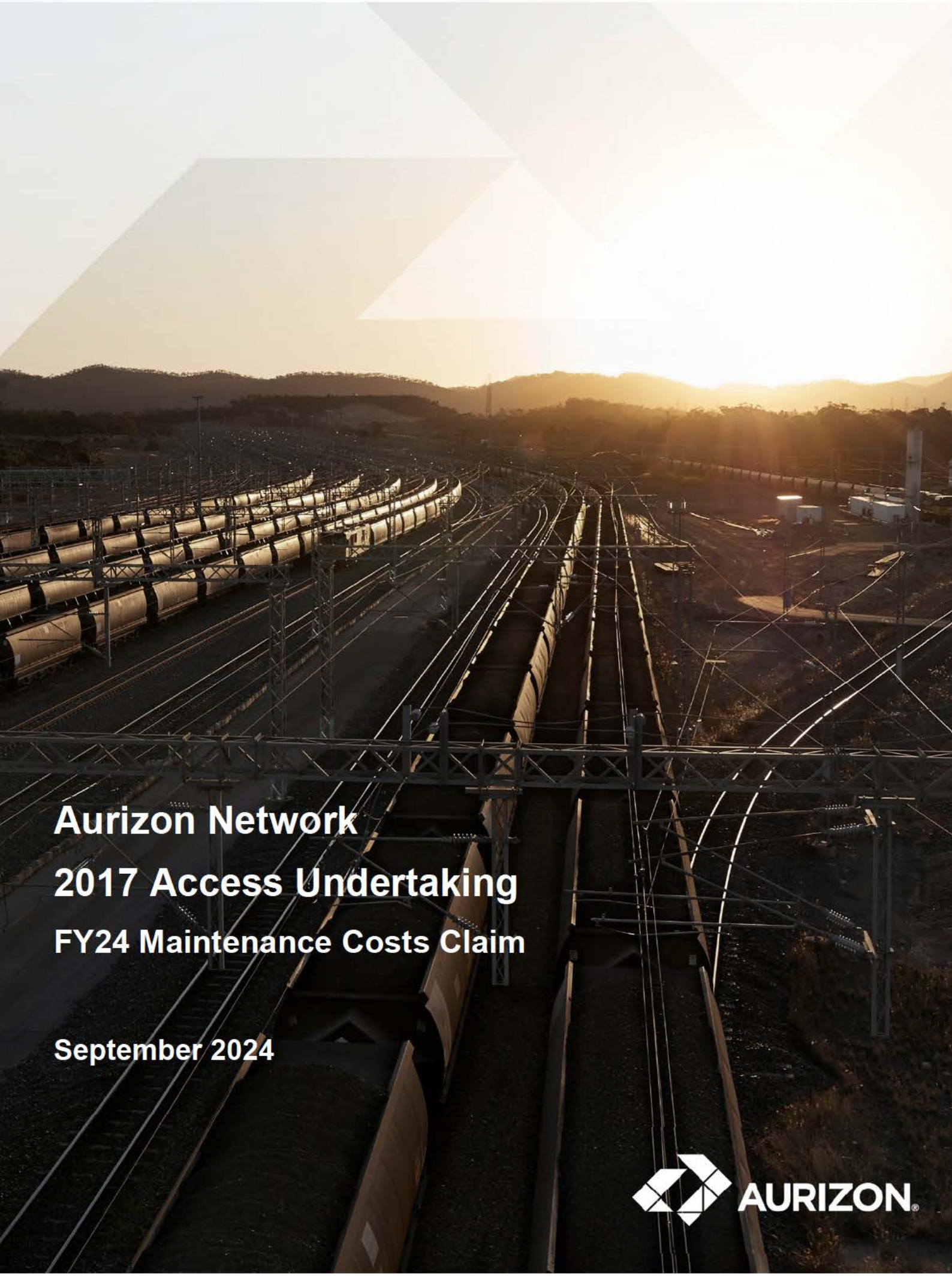

Aurizon Network
2017 Access Undertaking
FY24 Maintenance Costs Claim

September 2024

AURIZON

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1. Executive Summary

1.1 Overview

Aurizon Network Pty Ltd (**Aurizon Network**) is the accredited Rail Infrastructure Manager of the Central Queensland Coal Network (**CQCN**), the largest open-access coal rail network in Australia and one of the country's most complex rail freight networks. The CQCN is comprised of over 2,670 kilometres of heavy haul railway track, linking more than forty mines to five coal export terminals across four major Coal Systems and the Goonyella to Abbot Point Expansion (**GAPE**).

Third party access to the CQCN is regulated by the Queensland Competition Authority (**QCA**) and managed in accordance with the 2017 Access Undertaking (**UT5**). UT5 provides for customer involvement in the development and assessment of Aurizon Network's Maintenance and Renewal Strategies and Budgets (**MRSB**) for each year and for each Coal System.

Following consultation with stakeholders and the Rail Industry Group (**RIG**), Aurizon Network's final draft MRSB for the Financial Year ending 30 June 2024 (**FY24**) was provided to the Chair of the RIG on 20 January 2023. On 14 February 2023, the Chair of the RIG advised Aurizon Network and the QCA that the relevant Special Majority of End Users had approved the FY24 Maintenance Strategies and Budgets (**MSB**) for all Coal Systems.

During FY24, Aurizon Network has implemented the approved MSB for each Coal System and confirms that the CQCN maintenance program has been delivered having regard to the UT5 Maintenance Objectives (**Maintenance Objectives**). Specifically:

- Seeking to ensure that Committed Capacity is delivered;
- Appropriately balancing cost, reliability, and performance of the Rail Infrastructure; and
- Coordinating outages with other Supply Chain Participants wherever reasonably possible with a view to maximising throughput.

In doing so, Aurizon Network notes that some cost and scope variances do exist in comparison to the approved MSB for each Coal System. It should be noted that when developing the approved MSB, Aurizon Network is required to forecast maintenance scope and cost up to 18-months in advance of execution. A degree of variation is expected due to the dynamic nature of linear heavy haul Rail Infrastructure in which asset condition and criticality can change due to normal railway operations, meteorological and environmental factors and relative degradation rates.

1.2 FY24 Maintenance Costs Claim

Aurizon Network submits for QCA approval, its actual Direct Maintenance Costs incurred (**Maintenance Costs Claim**) for FY24. This Maintenance Costs Claim is consistent[1] with the FY24 maintenance costs that Aurizon Network communicated to Customers on:

- 31 July 2024 as part of the RIG quarterly report for FY24 Q4; and
- 15 August 2024 as part of the Quarterly RIG Forum group presentation.

[1] Some minor variances may exist due to rounding.

Aggregate CQCN Outcomes

The FY24 MSB provided for:

- a total maintenance budget of $166.1m; less
- an estimated non-coal maintenance cost allocation of $1.96m,

representing an aggregate maintenance budget for the CQCN of $164.1m.

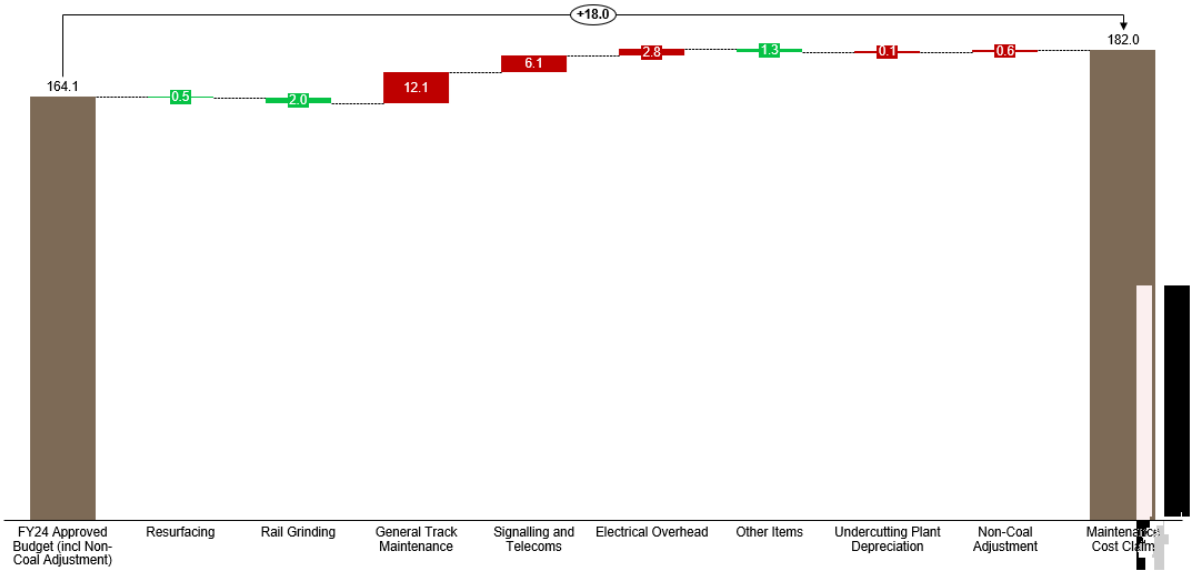
During FY24, Aurizon Network incurred total maintenance costs of $183.4m, with actual non-coal maintenance spend equating to $1.3m. Aurizon Network's FY24 maintenance cost claim for the CQCN in aggregate is $182.0m; representing an over-spend of $18.0m or 10.9%.

The overspend relative to budget was primarily observed in three maintenance categories, namely:

- General Track Maintenance (+$12.1m);
- Signalling and Telecommunications (+$6.1m); and
- Electrical Overhead (+$2.8m).

The variance to budget for each category is illustrated in Figure 1 below.

Figure 1 CQCN – FY24 Maintenance Cost Variations to Budget by Maintenance Activity ($m)

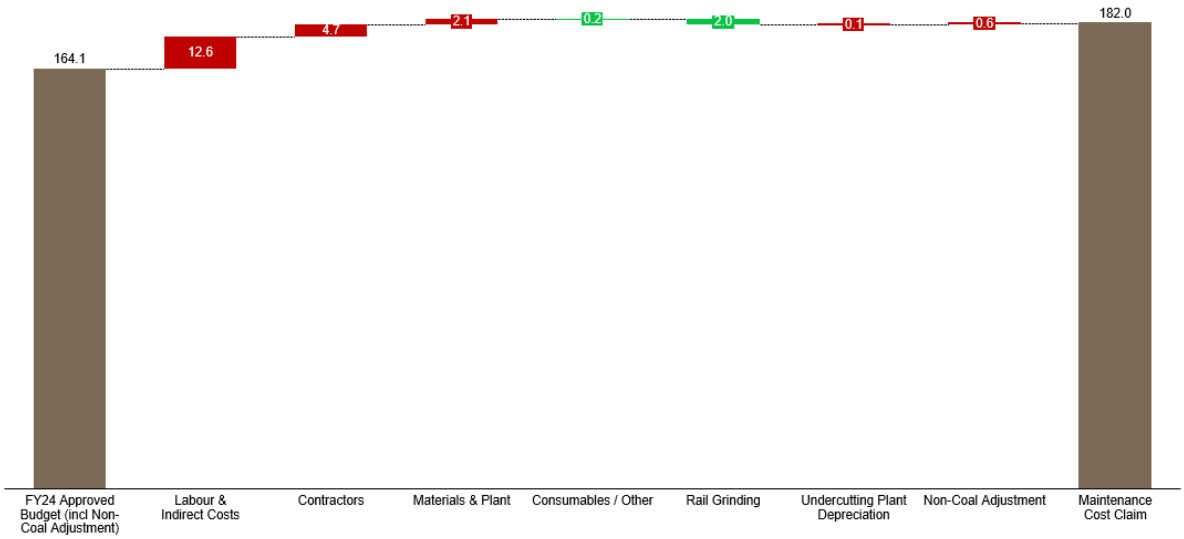


While Aurizon Network sought to deliver the FY24 maintenance program in line with the FY24 budget in each Coal System, market conditions and skilled labour shortages impacted its ability to do so. Aurizon Network incurred higher than budget spend in:

- Labour and Indirect Costs (+$12.6m);
- Contractor Costs (+$4.7m); and
- Materials and Plant (+$2.1m).

The variation by cost type is illustrated in Figure 2 below.

Figure 2 CQCN – FY24 Maintenance Cost Variations to Budget by Cost Type ($m)



The key drivers of overspend in these categories are generally consistent across all Coal Systems and are described in Table 1 below.

Table 1 Key drivers of CQCN maintenance variance to budget

Driver	Description
Labour and Indirect Costs[2]	Aurizon Network incurred additional Labour and Indirect costs within Civil and Electrical disciplines due to: • Infrastructure Enterprise Agreement (EA) outcomes, which saw: – headline wage increases of 5.5% broadly in line with the FY24 MRSB assumptions; – additional incentives (not anticipated when developing the FY24 MRSB) introduced to address skilled labour shortages for electrical trade staff. These include on call allowances, alignment of wage levels to national qualification framework, annual electrical licencing allowance and shift count arrangements for apprentices and trainees. • Non-EA attraction and retention initiatives: – Introduced to address resourcing risk for skilled labour in rail specific trades and competition in the external labour markets, particularly for electrical trades. Includes Western Depot retention payments, targeted apprentice and trainee programs, referral program and accelerated training programs. • Indirect Cost increases: – Aurizon Network has seen increases driven by higher market prices for accommodation, higher maintenance and servicing cost for Aurizon Network's light vehicle fleet, and skilled resource shortages has meant that trade staff have been redeployed to other CQCN locations, resulting in increased travel and accommodation costs. • Contract Labour Hire Support: – Additional support required to support internal labour shortages in Civil and Electrical depots. Increase in cost has been partially offset by a reduction in internal labour costs where positions have not been able to be recruited; – Civil labour engaged to support rectification of corrective maintenance defects predominantly during the first half of FY24;

[2] Indirect costs refer to minor consumables, materials and depreciation incurred to facilitate staff in the delivery of maintenance and renewal activities within the depots (e.g. travel and accommodation, PPE, other minor depot costs).

Driver	Description
	– Electrical labour engaged throughout FY24 to support the apprentice and trainee resource levels. Labour market challenges are not unique to Aurizon Network, with similar pressures experienced by other entities: • **Queensland Rail**'s Network EA (approved in December 2023) included wage increases of 4.5%, 4.5% and 3.5% annually from 1 March 2023, alongside an immediate additional wage increase of 5.5% applied from 1 March 2023 for all employees, and a further 7% wage increase for qualified electrical staff.[3] • **Ergon Energy** - Ergon explicitly identifies labour and skills shortages and supply chain issues as a key challenge. *"…we are operating in an environment where recruiting appropriately skilled staff and procuring materials and equipment to build and maintain our network is challenging"*[4]; and • **Energy Qld**[5] – *"we expect to see the continuation of critical skilled labour shortages and competition for scarce labour - particularly from the mining and construction sectors - which will push up wage demands in the utilities sector. Mining investment is now picking up and is forecast to see significant increases over the next 2 years to FY25 and remain at elevated levels to the end of the decade."*
Contractor Costs	Aurizon Network supplements its labour and plant resources with externally procured contractors where specialist equipment / skills are required, or where a large volume of activity is to be delivered concurrently. Primarily supports General Track Maintenance works. • Track Geometry Recording costs: – The delayed commissioning of the Automated Track Inspection System (ATIS) meant that Aurizon Network was required to extend the Track Geometry Recording Car contract with Queensland Rail to ensure compliance with the Safety Management System. • Fire and Vegetation Management: – Aurizon Network has obligations to implement effective bushfire management practices, mitigating the potential for fire to originate within the CQCN or for fire from adjoining land to enter the rail corridor. Following bushfire warnings issued by the Bureau of Meteorology in H1 FY24, preventative fire breaks were graded in the Goonyella system using contractors with specialised labour plant and equipment. – Vegetation management has historically been conducted on a 'reactive' basis following identification of hazards. For FY24, Aurizon Network adopted a preventative approach seeking to reduce the risk of vegetation related delays and cancellations. The preventive approach saw these works packaged into a program of works in line with MRSB allowances and outsourced to specialist contractors. – Impacts of wet weather during Q2 and Q3 FY24 saw a substantive amount of vegetation growth throughout the corridor, requiring increased levels of corrective maintenance to prevent interference with train running, road access and completion of track maintenance. These corrective works were required in addition to the package of preventative works described above. Additional tree and vegetation management was required at Black Mountain (Connors Range). Due to the nature and size of the trees and overhanging canopies, it was necessary to engage specialised arborist contractors to complete the work.

[3] Queensland Rail Network Enterprise Agreement 2023, pg. 65. (Available here)

[4] Ergon Energy (2024), Network Regulatory Proposal 2025-30, pg. 39. (Available here)

[5] Oxford Economics Australia (2024), Energy Qld: Input Cost Escalation: Forecasts to 2029/30, pg. 27. (Available here)

Driver	Description
Materials & Plant Usage	Reflects the cost of materials (ballast, rail, sleepers etc) and cost associated with plant and equipment owned by Aurizon Network. • Ballast material prices: – Aurizon Network incurred additional costs for ballast materials used in various General Track and Other Civil Maintenance activities, including top and line spot tamping. This was driven by higher ballast prices and an increase in corrective activity levels requiring ballast material; – The increase in ballast prices is attributable to changes in the external supply market for ballast and quarry materials. During 2022 and 2023, several quarries in strategic locations across the CQCN were acquired by an independent construction materials service provider. Since acquisition, prices of ballast have increased considerably and Aurizon Network's ballast procurement strategy will seek to identify alternate quarry suppliers to reduce reliance on the single entity suppliers. • Rail Repair activity: – is the immediate action after a rail break or rail defect and depending on the location and severity of the break, these are typically rectified by clamping track (as a temporary measure), small rail insertion (6m) or rail renewal to allow operations to resume ahead of a larger capital renewal. – Aurizon Network saw an increase in rail repair and rail joint management activities during FY24 across both the Blackwater and the Goonyella systems with the number of defects rectified rising by 6% and 12% respectfully when compared to prior periods. The increase in defects has also resulted in an increase in the consumption of materials and related inventory components.

Maintenance Cost Claim for Individual Coal Systems

Aurizon Network's FY24 Maintenance Cost Claim for each Coal System is presented in Table 2.

Table 2 FY24 Maintenance Costs Incurred by Coal System ($m)

System	Approved Budget[6]	Actual Costs Incurred	Non-Coal Adjustment	Maintenance Cost Claim	Variance ($m)
Blackwater	69.9	76.2	(1.2)	**75.0**	5.1
Goonyella	67.2	74.8	(0.0)	**74.8**	7.5
Moura	13.2	17.0	(0.1)	**16.9**	3.8
Newlands / GAPE	13.8	15.4	(0.1)	**15.3**	1.5
Total	**164.1**	**183.4**	**(1.3)**	**182.0**	**18.0**

Aurizon Network acknowledges that the costs incurred for some maintenance 'items' have exceeded the UT5 materiality threshold (i.e. +/- $2 million). These items are summarised in Table 3 below, noting that expenditure in the Newlands System and GAPE did not exceed the threshold.

[6] Approved Budget incorporates a forecast reduction for non-coal expenditure of $1.96m.

Table 3 Maintenance Items exceeding the UT5 materiality threshold

System	Item Exceeding Threshold	Budget ($m)	Cost Incurred ($m)	Variance ($m)
Blackwater	General Track	21.9	25.5	3.6
Goonyella	General Track	16.0	20.0	3.9
	Signalling and Telecommunications	10.8	14.4	3.5
Moura	General Track[7]	5.9	9.0	3.1
Newlands / GAPE	N/A	--	--	--

Aurizon Network has provided additional commentary specific to each individual Coal System in the body of this submission.

Aurizon Network confirms that with the exception of those maintenance items outlined in Table 3, there are no other items within the Maintenance Costs Claim for a Coal System that differ in a material respect (i.e. exceeding +/- $2m) when compared to the corresponding item in the Approved Maintenance Strategy and Budget. The FY24 Maintenance Cost Claim for each Coal System with respect to these items meets the requirements of clause 7A.11.5(f) of UT5, are consistent with the Approved Maintenance Strategy and Budget, and as a result, should be approved.

Regarding the maintenance items outlined in Table 3, Aurizon Network contends that market conditions have resulted in a higher cost environment than was originally contemplated at the time of developing the FY24 MSB. Furthermore, Aurizon Network considers that, consistent with clause 7A.11.3(q), the additional maintenance costs incurred during FY24 were prudent, necessary and incurred solely for the purpose of promoting the safety, reliability, and performance of the Rail Infrastructure.

Consequently, Aurizon Network considers that the costs specified in the FY24 Maintenance Cost Claim for each Coal System are prudent and efficient, and as a result, should be approved.

1.3 Form of Submission

This submission outlines all matters that are relevant to the Maintenance Cost Claim and is structured as follows:

Section 2	Provides an overview of the Regulatory Process relevant to the QCA's assessment of Aurizon Network's Maintenance Costs Claim
Section 3	Blackwater System Maintenance Cost Claim
Section 4	Goonyella System Maintenance Cost Claim
Section 5	Moura System Maintenance Cost Claim

[7] As agreed with the RIG, the entire budget for the Moura System is considered a maintenance 'item' for the purpose of the QCA's assessment under clause 7A.11.5(f)(ii) of UT5. General Track maintenance was the primary driver of the variation to budget in this system.

Section 6	Newlands System and GAPE Maintenance Cost Claim
Section 7	Provides an overview of how Aurizon Network has sought to promote the UT5 Maintenance Objectives

Aurizon Network has prepared financial models (**the Models**) in support of this submission and has provided these to QCA staff in electronic form. The Models contain Confidential Information relating to third party suppliers and accordingly Aurizon Network requests that the Models are not published.

Please note that the tables included within this submission may not add due to rounding.

2. Overview of the Regulatory Process

Clause 7A.11.3 of UT5 provides a process through which Aurizon Network can seek pre-approval of its MSB for a Coal System for a Year. Upon approval of the MSB for each Coal System (either by a Special Majority of End Users via the RIG process or by the QCA), Aurizon Network will:

- give effect to the MSB for each Coal System by setting a forecast Maintenance Indicator for the forthcoming financial year as part of the Annual review of Reference Tariffs process (Clause 4 of Schedule F to UT5); and
- implement the approved MSB for each Coal System during the year.

Following the end of each financial year, Aurizon Network will submit its Maintenance Costs Claim to the QCA for approval in accordance with Clause 7A.11.5.

2.1 QCA assessment of the Maintenance Costs Claim

As outlined in clause 7A.11.5(f) of UT5, the QCA will determine the extent to which Aurizon Network's Maintenance Costs Claim is consistent with the Approved MSB for each Coal System, having regard to a materiality threshold of +/- $2 million for a maintenance 'item'.

In this context, the term 'item' is not defined within UT5. Aurizon Network has agreed with the RIG that for the purpose of the QCA's assessment under clause 7A.11.5(f)(ii) of UT5:

- for Blackwater and Goonyella:
  - the product areas of Resurfacing, Rail Grinding, General Track Maintenance, 'Signalling and Telecoms' and Electrical should be considered as individual maintenance items; and
  - the remaining product areas should be considered a single maintenance item.
- for Moura and Newlands/GAPE:
  - the maintenance budget in its entirety should be considered a maintenance 'item'.

2.1.1 QCA process where there is no material difference

As specified in clause 7A.11.5(f)(i) to 7A.11.5(f)(ii)(A), where the Maintenance Costs Claim is consistent with the Approved MSB:

- End Users are deemed to support the relevant elements of the Maintenance Costs Claim; and
- the QCA will approve the Maintenance Costs Claim.

2.1.2 Approval process where a material difference exists

Where there is a difference in a material respect, the QCA will consider any item:

- which is at least $2 million more than the corresponding item in the Approved MSB for a Coal System;
- which is at least $2 million less than the corresponding item in the Approved MSB for a Coal System; or
- in the Approved MSB which has a value of at least $2 million and which Aurizon Network has failed to undertake.

Members of the RIG may make submissions to the QCA to the extent the Maintenance Cost claim differs in a material respect from a Coal System's Approved MSB.

The QCA must approve costs that are different in a material respect to the extent those costs are prudent and efficient. In making its determination, the QCA may have regard to the Maintenance Objectives, which are outlined in Clause 7A.11.1(a)(iii)(A)-(C) and in section 1.1 above.

2.2 Reconciliation of approved maintenance costs

To the extent that the actual maintenance costs approved by the QCA under clause 7A.11.5 differs from the amounts recovered through Allowable Revenues and Reference Tariffs during the year, the Revenue Adjustment Amounts (Revenue Cap) process includes an adjustment under Schedule F, Clause 4.3 (c)(ii) to reconcile that difference.

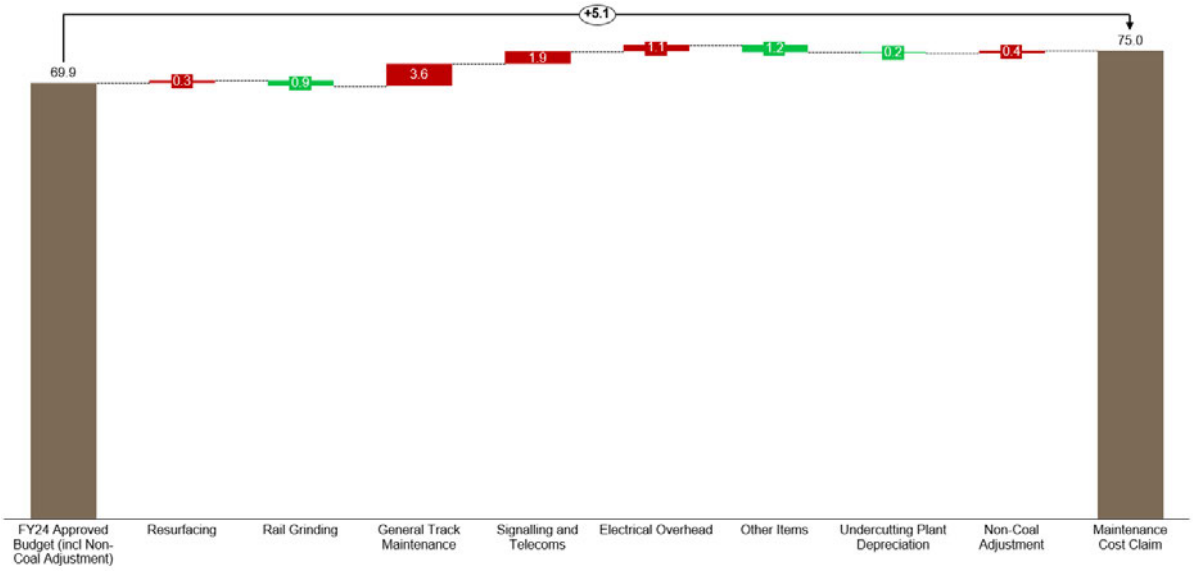
3. Blackwater System Maintenance Costs Claim

This section outlines the actual Direct Maintenance Costs that Aurizon Network incurred during FY24 in delivering Maintenance Work in the Blackwater System.

3.1 Direct Maintenance Cost Performance

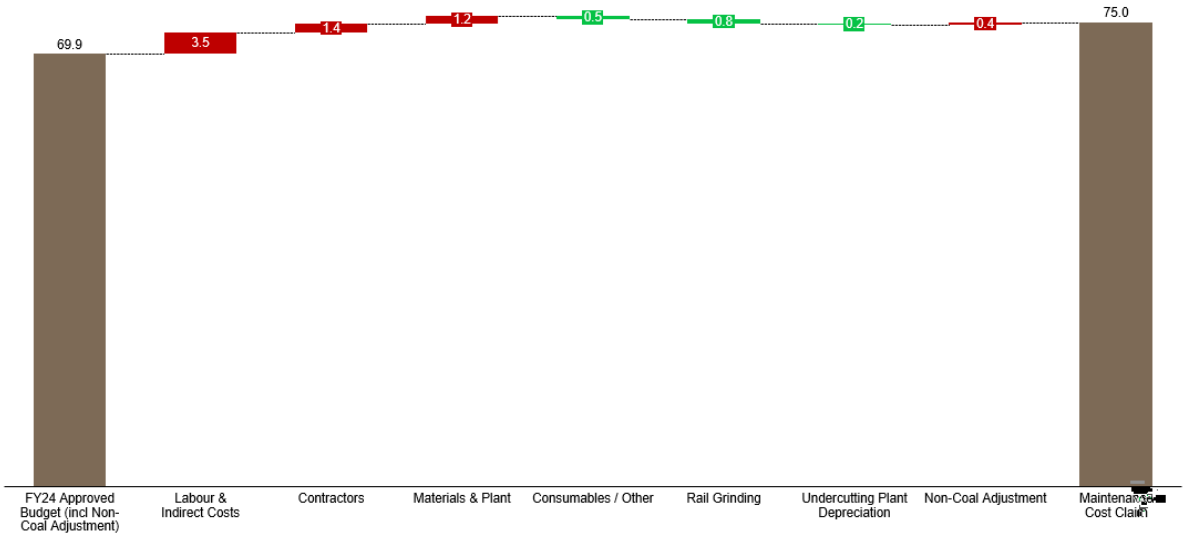
Aurizon Network submits for QCA approval, a Maintenance Cost Claim of $75.0m. After adjusting for non-coal expenditure, Aurizon Network's Maintenance Cost Claim is $5.1m higher than the approved maintenance budget of $69.9m for this Coal System. Aurizon Network has outlined cost variances by Maintenance Item and Cost Category in Figure 3 and Figure 4 below.

Figure 3 Blackwater System Maintenance Costs Incurred ($m)



Maintenance cost variances by cost category are summarised in Figure 4 below.

Figure 4 Blackwater System Maintenance Cost variance by cost category



The variance between the FY24 budget and Aurizon Network's actual costs is primarily driven by increases in the General Track Maintenance, Signalling and Telecoms and Electrical Overhead maintenance items.

As described in section 1.2 of this submission, and in the quarterly reports provided to the Rail Industry Group, a variety of factors impacted Aurizon Network's ability to deliver FY24 maintenance work within the defined materiality thresholds.

The attraction and retention of skilled labour has been a key challenge for Aurizon Network, particularly in civil and electrical disciplines. Aurizon Network has sought to address this through the introduction of enterprise agreement incentives and attraction and retention initiatives, and by engaging additional contract labour hire to support internal labour shortages and the rectification of increased corrective maintenance activities.

Aurizon Network understands the effects of the highly competitive labour market and demand for qualified resources are being felt more broadly across the construction, mining, energy and rail sectors. At the time of developing the FY24 MSB, Aurizon Network could not anticipate the extent to which labour and indirect costs, contractor costs and materials / plant costs would be impacted by these changes in the market.

Aurizon Network acknowledges the adverse impact to customers where costs exceed budget, and actively seeks to mitigate such impacts through its contract / supplier management processes. Nevertheless, Aurizon Network considers that it was prudent, efficient and necessary to incur additional costs during FY24 so as to ensure that the required maintenance work could be delivered.

Aurizon Network has assessed its actual maintenance costs incurred against the Approved MSB, taking into consideration the materiality thresholds specified in UT5, 7A.11.5(f)(ii)(B).

Table 4 Maintenance cost materiality thresholds

Legend:	
Consistent	Variation from Approved MSB is within +/- $2m materiality threshold.
Departed	Variation from Approved MSB exceeds +/- $2m materiality threshold.

The following table outlines whether Aurizon Network has remained consistent with or has departed from the approved MSB. In assessing the Maintenance Costs Claim (as per clause 7A.11.5), the QCA should have regard to the maintenance items, represented by the shaded rows in Table 5 below.

Table 5 Blackwater System Maintenance Costs – Comparison to Approved Budget ($m)

Maintenance Item ($m)	Maintenance Costs Incurred	Approved Budget	Cost Variance	Consistent or Departed
Resurfacing	**9.4**	**9.0**	**0.3**	
Mainline	*7.8*	*7.6*	*0.2*	
Turnout	*1.6*	*1.4*	*0.1*	
Rail Grinding	**8.0**	**8.8**	**(0.9)**	
Mainline	*5.8*	*6.5*	*(0.7)*	
Turnout	*2.1*	*2.3*	*(0.2)*	
Level Crossing	*0.1*	*0.1*	*(0.0)*	
General Track Maintenance	**25.5**	**21.9**	**3.6**	
General Track	*23.9*	*21.4*	*2.6*	

Maintenance Item ($m)	Maintenance Costs Incurred	Approved Budget	Cost Variance	Consistent or Departed
Track Recording	*1.0*	*--*	*1.0*	
Ultrasonic Testing	*0.6*	*0.6*	*0.0*	
Signalling and Telecoms	**13.7**	**11.8**	**1.9**	
Signalling Corrective	*3.8*	*3.4*	*0.4*	
Signalling Preventative	*7.2*	*6.1*	*1.1*	
Telecoms Corrective	*0.5*	*0.4*	*0.1*	
Telecoms Preventative	*2.2*	*2.0*	*0.2*	
Electrical	**8.1**	**7.0**	**1.1**	
OHLE Corrective	*2.1*	*2.2*	*(0.0)*	
OHLE Preventative	*4.3*	*3.0*	*1.3*	
Power Systems Corrective	*0.5*	*0.8*	*(0.3)*	
Power Systems Preventative	*1.1*	*1.0*	*0.1*	
Other Items	**8.5**	**9.6**	**(1.2)**	
Structures and Facilities	*2.9*	*2.5*	*0.4*	
Trackside Systems	*1.0*	*1.2*	*(0.1)*	
Other Civil Maintenance	*1.6*	*2.7*	*(1.1)*	
Other General Maintenance	*2.9*	*3.2*	*(0.3)*	
Sub-Total	**73.1**	**68.2**	**4.9**	
Ballast Undercutting Plant Depreciation	3.1	3.3	(0.2)	
Non-Coal Adjustment	(1.2)	(1.6)	0.4	
Maintenance Cost Claim	**75.0**	**69.9**	**5.1**	

3.2 Scope of Maintenance Work Undertaken

This section outlines the scope of Maintenance Work undertaken for those items where scope is specified within the FY24 MSB.

Table 6 Blackwater System Scope Delivered

Maintenance Item	Scope Delivered	RIG Approved Scope	Scope Variance	% Variance
Resurfacing				
Mainline	723	896	(173)	(19%)
Turnout	180	173	7	4%
Rail Grinding				
Mainline	[redacted]	[redacted]	[redacted]	[redacted]
Turnout	[redacted]	[redacted]	[redacted]	[redacted]
Level Crossing	[redacted]	[redacted]	[redacted]	[redacted]
General Track Maintenance				
Track Recording	2,396	--	2,396	--

Maintenance Item	Scope Delivered	RIG Approved Scope	Scope Variance	% Variance
Ultrasonic Testing	5,735	5,471	264	5%

3.3 Commentary on Maintenance Items

Aurizon Network has delivered Maintenance Work in the Blackwater System in a manner that is consistent with its legislative and regulatory obligations. By giving effect to the asset management plans and strategies[8] that underpinned the approved MSB, Aurizon Network has ensured compliance with these obligations.

As outlined in Table 5 above, a material variance exists in the 'General Track Maintenance' category. Further information in relation to this variance is outlined below.

For all other categories within Aurizon Network's Maintenance Costs Claim for the Blackwater System, there is no material difference in comparison to the corresponding item in the approved MSB. Consequently, Aurizon Network considers that the QCA should approve the Blackwater Maintenance Costs Claim.

Aurizon Network has provided commentary on specific maintenance categories below.

3.3.1 Resurfacing

Full year resurfacing scope of works was below the approved MSB in this system. Aurizon Network completed:

- 723km of mainline resurfacing scope during the year; 173km (19%) lower than the approved MSB due to a reduction in reactive resurfacing requirements and site accessibility which saw scope at some locations reduced; and
- resurfacing on 180 turnouts during the year; 7 (4%) more than the approved MSB.

Overall, resurfacing costs were $0.3 (4%) higher than budget, an outcome that can be attributed to:

- increased turnout resurfacing requirements; and
- allocation of resurfacing plant costs between Coal Systems. Please note that costs associated with the resurfacing plant are allocated between systems based on the percentage of operational days in each system.

3.3.2 Rail Grinding

During FY24:

- [redacted] of mainline rail grinding was completed, [redacted] than the approved MSB;
- rail grinding was completed on [redacted] turnouts, [redacted] than the approved MSB; and
- rail grinding was completed on [redacted] level crossings, [redacted] than the approved MSB.

Rail Grinding costs were $0.9m (-10%) lower than budget.

[8] The asset management plans and strategies are derived from Aurizon Network's Asset Maintenance and Renewal Policy, which in turn is the manifestation of Aurizon Network's practical application of the Safety Management System.

The delivery of some mainline and turnout grinding scope was unable to be completed in H1 FY24 as a result of heightened fire risk, track access, speed restriction in Callemondah Yard and an axle counter failure.

While the lost scope was replanned for completion in H2, this was unable to be achieved due to a machine breakdown and pathing availability in Q4 to facilitate Customer railings.

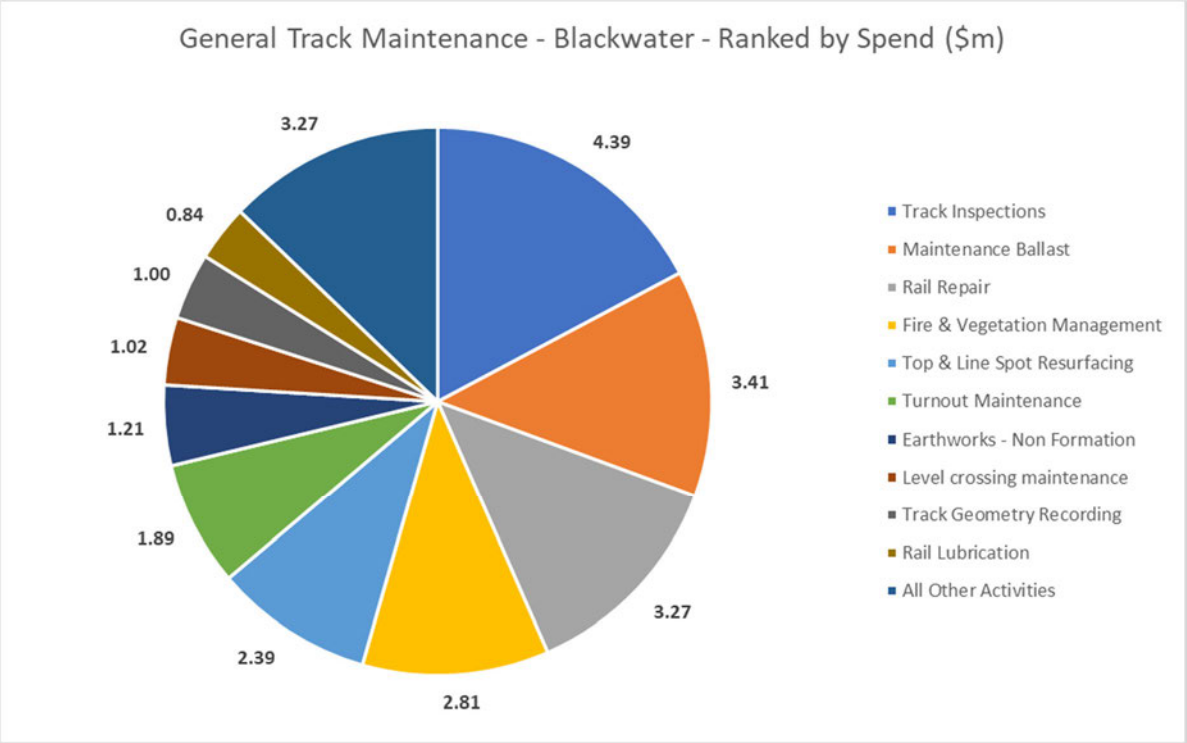
3.3.3 General Track Maintenance

Aurizon Network incurred $25.5m for General Track Maintenance in the Blackwater System, which exceeded the approved MSB by $3.6m (+16%) in aggregate.

The General Track Maintenance item is comprised of a multitude of activities, including planned corrective maintenance to rectify defects found during planned inspections on rail, sleepers, turnouts, ballast, formation and related off track infrastructure (including embankments, drainage and access roads).

The composition of the General Track Maintenance spend in Blackwater during FY24 is provided in Figure 5 below. Compared to the prior year (FY23), Aurizon Network incurred additional expenditure completing Rail Repairs (+$0.9m), Top and Line Spot Resurfacing (+$0.7m), Level Crossing Maintenance (+$0.6m) and Turnout Maintenance (+$0.4m).

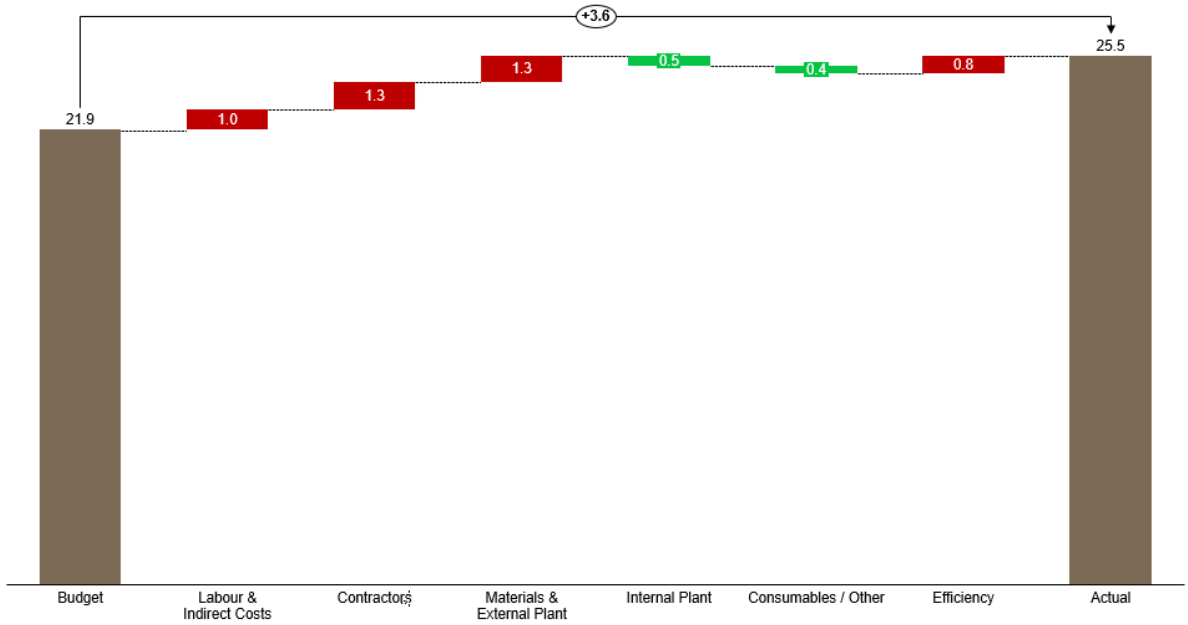
Figure 5 General Track Maintenance Spend by Activity – Blackwater ($m)



Aurizon Network has seen an increase in rail repair and rail joint management activities during FY24, with the number of defects increasing c.6% when compared to prior years. These activities are completed by a combination of internal staff, supported by contractors who typically assist with rail restressing activities for larger repairs and support internal resources to complete required repairs within prescribed timeframes. The increased level of defects has also resulted in an increase in the consumption of materials and related inventory components.

The cost categories driving the increase in Blackwater General Track Maintenance spend compared to the FY24 MSB are outlined in Figure 6 below:

Figure 6 General Track Maintenance – Cost Category Variations – Blackwater



Labour & Indirect Costs

The factors impacting Labour and Indirect Costs have been described in section 1.2 of this submission. The Civil Infrastructure teams in each district are the primary contributors of labour and indirect costs within the General Track maintenance category, and Aurizon Network has incurred additional labour and indirect costs to support labour shortages and higher levels of corrective maintenance.

Contractor Costs

Approximately $1.0m of the increase in Contractor costs was attributable to an extension of the QR Track Geometry Recording Car contract. Aurizon Network experienced a combination of supply chain and hardware delays which delayed the commissioning of ATIS. As a consequence, it was necessary to extend the QR Track Geometry Recording arrangement for FY24 to ensure SMS (Safety Management System) standard requirements could be met. Costs associated with the QR Track Geometry Recording Car were not provided for in the FY24 MSB.

Following bushfire warnings issued by the Bureau of Meteorology in H1 FY24, and substantive vegetation growth resulting from La Nina wet weather, Aurizon Network carried out additional fire and vegetation management activities during FY24. The FY24 MSB assumed Fire & Vegetation activities would be delivered by a combination of internal resources and external contractor support. With the increase in levels of corrective maintenance work to be undertaken by internal resources, higher levels of contractor support were required undertake these activities, using specialised labour, plant and machinery.

Materials & External Plant

Aurizon Network incurred additional costs for ballast materials, which are used in various General Track Maintenance activities across the system. This was predominantly driven by higher ballast prices and an increase in corrective activity levels requiring ballast material.

The increase in ballast prices was driven by changes in the external supply market for ballast and quarry materials. During 2022 and 2023, a number of quarries in strategic locations across the CQCN

were acquired by an independent construction materials service provider. Since acquisition, prices of ballast have increased by c.17%. Aurizon Network has sought to partially mitigate the pricing risk by implementing a ballast procurement strategy to identify alternate quarry suppliers to reduce reliance on the single entity suppliers.

Additional ballast materials are required to top up stockpiles to support the increased level of maintenance activity. As noted above, there has been an increase in Top & Line spot resurfacing, which may also require ballast to be used to rectify track geometry.

3.3.4 Signalling and Telecoms

Signalling and Telecommunications maintenance category encompasses activities across Corrective and Preventative maintenance activities. During FY24, Aurizon Network incurred $13.7m in signalling and telecoms maintenance costs, which exceeded the approved MSB by $1.9m (+16%) in aggregate.

The increased spend in this category was driven by the challenges Aurizon Network has experienced in attracting and retaining qualified rail specific electrical resources including;

- national skills shortages, particularly for rail specific electrical qualifications;
- attraction and retention challenges with other (i.e. non-Aurizon) projects contributing to competitive labour market conditions for electrical disciplines; and
- impacts of inflation, skills shortages and external market growth on the cost base of our critical external contractors.

Aurizon Network has implemented a number of initiatives and incentives to address these challenges including;

- EA outcomes which have provided additional incentives for electrical trades to align with industry and the competitive market;
- Targeted apprentice and trainee programs for key rail specific electrical trades including Signal Electricians, Systems Maintainers, Traction Linespersons, Traction Electricians and Telecommunications Technicians. Apprentice and trainee FTE currently represent 28% of electrical trade qualified resources across the Electrical discipline; and
- A level of contract labour hire has been maintained to support the ongoing delivery of planned MRSB activities as the apprentices and trainees complete their qualifications. Contract labour hire currently represents 9% of electrical trade qualified resources across the Electrical discipline.

3.3.5 Electrical

Aurizon Network incurred $8.1m in electrical maintenance costs; representing an over-spend of $1.1m (16%) in aggregate when compared to the approved MSB.

The factors driving additional expenditure in the electric maintenance are consistent with those described in the Signalling and Telecoms section above.

3.3.6 Other Items

- Structures and Facilities Maintenance - Aurizon Network incurred $2.9m in structures and facilities maintenance, representing an over-spend of $0.4m when compared to the approved MSB. The increase is attributable to additional concrete bridge repairs on Calliope River Bridge, additional slab stabilisation works to manage a TSR and strengthening bar maintenance.

- Trackside Systems - full year spend was $0.1m below the approved MSB; 12% under budget.
- Other Civil Maintenance - full year spend was $1.1m lower than the approved MSB because of lower-than-expected maintenance requirements. This offsets some of the increase in general track maintenance activities.
- Other General Maintenance - Aurizon Network's full year spend was $0.3m below the approved MSB.

3.3.7 Ballast Undercutting Plant Depreciation

Ballast undercutting plant depreciation was $3.1m, which was $0.2m lower than the approved MSB. The allocation of ballast undercutting plant depreciation between Coal Systems is aligned to scope delivery for the year.

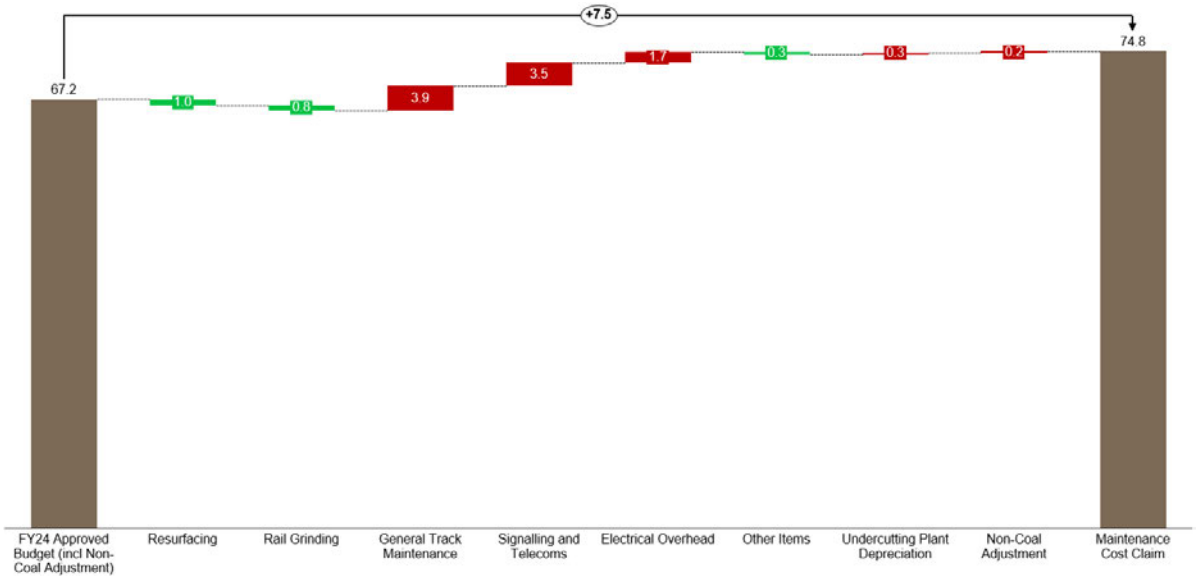
4. Goonyella System Maintenance Costs Claim

This section outlines the actual Direct Maintenance Costs that Aurizon Network incurred during FY24 in delivering Maintenance Work in the Goonyella System.

4.1 Direct Maintenance Cost Performance

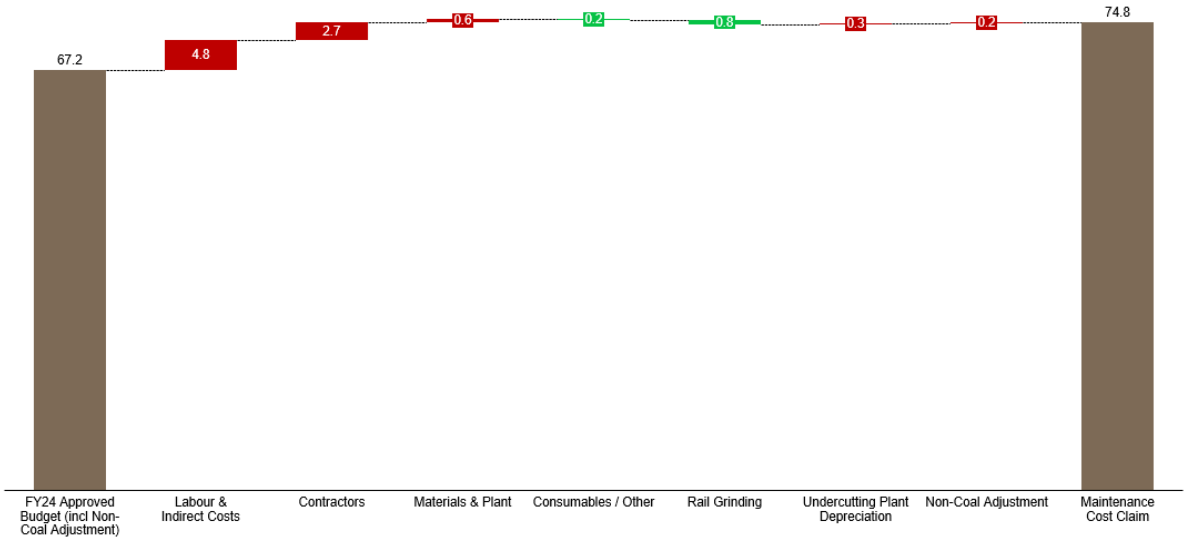
Aurizon Network submits for QCA approval, a Maintenance Cost Claim of $74.8m. After adjusting for non-coal expenditure, Aurizon Network's Maintenance Cost Claim is $7.5m higher than the approved maintenance budget of $67.2m for this Coal System. Aurizon Network has outlined cost variances by Maintenance Item and Cost Category in Figure 7 and Figure 8 below.

Figure 7 Goonyella System Maintenance Costs Incurred ($m)



Maintenance cost variances by cost category are summarised in Figure 8 below.

Figure 8 Goonyella System Maintenance Cost variance by cost category



The variance between the FY24 budget and Aurizon Network's actual costs is primarily driven by increases in the General Track Maintenance and Signalling and Telecoms maintenance items, which have both exceeded the UT5 materiality threshold.

As described in section 1.2 of this submission, and in the quarterly reports provided to the Rail Industry Group, a variety of factors impacted Aurizon Network's ability to deliver FY24 maintenance work within the defined materiality thresholds.

The attraction and retention of skilled labour has been a key challenge for Aurizon Network, particularly in civil and electrical disciplines. Aurizon Network has sought to address this through the introduction of enterprise agreement incentives and attraction and retention initiatives, and by engaging additional contract labour hire to support internal labour shortages and the rectification of increased corrective maintenance activities.

Aurizon Network understands the effects of the highly competitive labour market and demand for qualified resources are being felt more broadly across the construction, mining, energy and rail sectors. At the time of developing the FY24 MSB, Aurizon Network could not anticipate the extent to which labour and indirect costs, contractor costs and materials / plant costs would be impacted by these changes in the market.

Aurizon Network acknowledges the adverse impact to customers where costs exceed budget, and actively seeks to mitigate such impacts through its contract / supplier management processes. Nevertheless, Aurizon Network considers that it was prudent, efficient and necessary to incur additional costs during FY24 so as to ensure that the required maintenance work could be delivered.

Aurizon Network has assessed its actual maintenance costs incurred against the Approved MSB, taking into consideration the materiality thresholds specified in UT5, 7A.11.5(f)(ii)(B).

Table 7 Maintenance cost materiality thresholds

Legend:	
Consistent	Variation from Approved MSB is within +/- $2m materiality threshold.
Departed	Variation from Approved MSB exceeds +/- $2m materiality threshold.

The following table outlines whether Aurizon Network has remained consistent with or has departed from the approved MSB. In assessing the Maintenance Costs Claim (as per clause 7A.11.5), the QCA should have regard to the maintenance items, represented by the shaded rows in Table 8 below.

Table 8 Goonyella System Maintenance Costs – Comparison to Approved Budget ($m)

Maintenance Item ($m)	Maintenance Costs Incurred	Approved Budget	Cost Variance	Consistent or Departed
Resurfacing	**8.3**	**9.3**	**(1.0)**	
Mainline	*6.6*	*7.6*	*(0.9)*	
Turnout	*1.7*	*1.7*	*(0.1)*	
Rail Grinding	**10.6**	**11.3**	**(0.8)**	
Mainline	*8.5*	*8.8*	*(0.3)*	
Turnout	*2.0*	*2.4*	*(0.4)*	
Level Crossing	*0.1*	*0.1*	*(0.0)*	
General Track Maintenance	**20.0**	**16.0**	**3.9**	
General Track	*18.4*	*15.4*	*3.0*	

Maintenance Item ($m)	Maintenance Costs Incurred	Approved Budget	Cost Variance	Consistent or Departed
Track Recording	*0.9*	*--*	*0.9*	
Ultrasonic Testing	*0.6*	*0.7*	*(0.0)*	
Signalling and Telecoms	**14.4**	**10.8**	**3.5**	
Signalling Corrective	*4.7*	*3.2*	*1.5*	
Signalling Preventative	*6.2*	*4.8*	*1.4*	
Telecoms Corrective	*0.7*	*0.3*	*0.4*	
Telecoms Preventative	*2.7*	*2.4*	*0.3*	
Electrical	**9.0**	**7.4**	**1.7**	
OHLE Corrective	*3.0*	*3.0*	*(0.0)*	
OHLE Preventative	*3.8*	*2.7*	*1.1*	
Power Systems Corrective	*1.0*	*0.7*	*0.3*	
Power Systems Preventative	*1.2*	*0.9*	*0.3*	
Other Items	**9.3**	**9.6**	**(0.3)**	
Structures and Facilities	*2.4*	*2.3*	*0.1*	
Trackside Systems	*2.0*	*1.5*	*0.4*	
Other Civil Maintenance	*3.0*	*3.4*	*(0.5)*	
Other General Maintenance	*2.0*	*2.4*	*(0.4)*	
Sub-Total	**71.5**	**64.4**	**7.1**	
Ballast Undercutting Plant Depreciation	3.3	3.0	0.3	
Non-Coal Adjustment	(0.0)	(0.2)	0.2	
Maintenance Cost Claim	**74.8**	**67.2**	**7.5**	

4.2 Scope of Maintenance Work Undertaken

This section outlines the scope of Maintenance Work undertaken for those items where scope is specified within the FY24 MSB.

Table 9 Goonyella System Scope Delivered

Maintenance Item	Scope Delivered	RIG Approved Scope	Scope Variance	% Variance
Resurfacing				
Mainline	519	956	(437)	(46%)
Turnout	154	189	(35)	(19%)
Rail Grinding				
Mainline	[redacted]	[redacted]	[redacted]	[redacted]
Turnout	[redacted]	[redacted]	[redacted]	[redacted]
Level Crossing	[redacted]	[redacted]	[redacted]	[redacted]
General Track Maintenance				
Track Recording	2,028	--	2,028	--

Maintenance Item	Scope Delivered	RIG Approved Scope	Scope Variance	% Variance
Ultrasonic Testing	5,246	5,455	(209)	(4%)

4.3 Commentary on annual performance for Maintenance Items

Aurizon Network has delivered Maintenance Work in the Goonyella System in a manner that is consistent with its legislative and regulatory obligations. By giving effect to the asset management plans and strategies[9] that underpinned the approved MSB, Aurizon Network has ensured compliance with these obligations.

As indicated in Table 8 above, a material variance exists in the 'General Track Maintenance' and 'Signalling and Telecommunications' maintenance categories. Further information in relation to these variances are outlined below.

Aurizon Network has provided some commentary on specific maintenance categories below.

4.3.1 Resurfacing

During FY24, Aurizon Network:

- delivered 519km of mainline resurfacing scope, which was 437km lower (-46%) than the approved MSB of 956km; and
- resurfaced 154 turnouts, 35 fewer (-19%) than the approved MSB.

Resurfacing scope delivered in the Goonyella System was materially lower than the FY24 MSB. As reported to the Rail Industry Group throughout the year, the shortfall in resurfacing scope can primarily be attributed to asset condition in other systems (particularly during H1 FY24), which saw resurfacing works in these other systems prioritised and corresponding allocations in plant cost between systems (based on operational days). Site complexities in some locations required relatively short scope distances to be completed per shift (rather than longer continuous sections), which also impacted Aurizon Network's ability to achieve the aggregate budget scope for the year. Despite targeting areas under speed restriction during Q4, access constraints in this quarter (where Access Holders target increased railings prior to the end of financial year) impacted Aurizon Network's ability to recover the full year FY24 MSB scope.

Resurfacing requirements for H2 FY24 were expected to increase based on historical wet weather impacts and a focus on reducing speed restrictions during Q4 did see additional scope and cost delivered in Goonyella. Nevertheless, the full year delivery for FY24 remained lower than the MSB.

Aurizon Network's total costs for the year were $8.3m (-11%) lower than the approved MSB of $9.3m. The reduction in operational days in the Goonyella System resulted in a lower allocation of resurfacing plant costs to this system.

4.3.2 Rail Grinding

During FY24, Aurizon Network:

[9] The asset management plans and strategies are derived from Aurizon Network's Asset Maintenance and Renewal Policy, which in turn is the manifestation of Aurizon Network's practical application of the Safety Management System.

- delivered [redacted] km of mainline rail grinding; [redacted] than the MSB;
- completed rail grinding on [redacted] turnouts; [redacted] than the MSB; and
- completed rail grinding on [redacted] level crossings; [redacted] than the MSB.

Overall rail grinding spend was $0.8m (-7%) lower than the approved MSB.

Some mainline grinding scope was unable to be delivered due to access restrictions on the day of the planned grind, and unable to be replanned in Q4 due to pathing availability.

Turnout grinding in Q1 was unable to be completed due to a machine breakdown in September 2023 and heightened fire risk.

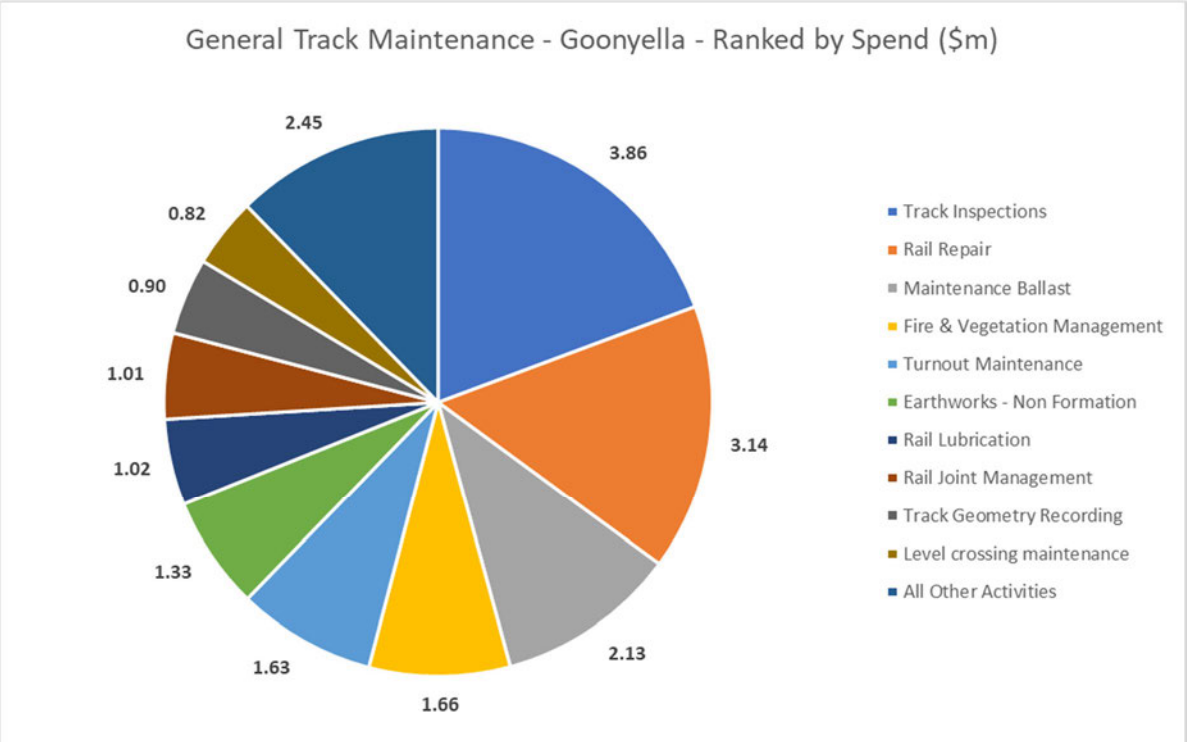
4.3.3 General Track Maintenance

Aurizon Network incurred $20.0m on General Track Maintenance works; representing an over-spend of $3.9m (24%) in aggregate compared to the MSB.

The General Track Maintenance item is comprised of a multitude of activities, including planned corrective maintenance to rectify defects found during planned inspections on rail, sleepers, turnouts, ballast, formation and related off track infrastructure (including embankments, drainage and access roads).

The composition of the General Track Maintenance spend in Goonyella during FY24 is provided in Figure 9 below. Compared to the prior year (FY23), Aurizon Network incurred additional expenditure completing Rail Repairs (+$1.1m), Earthworks – Non Formation (+$0.6m), Turnout Maintenance (+$0.5m) and Maintenance Ballast (+$0.5m).

Figure 9 General Track Maintenance Spend by Activity – Goonyella ($m)

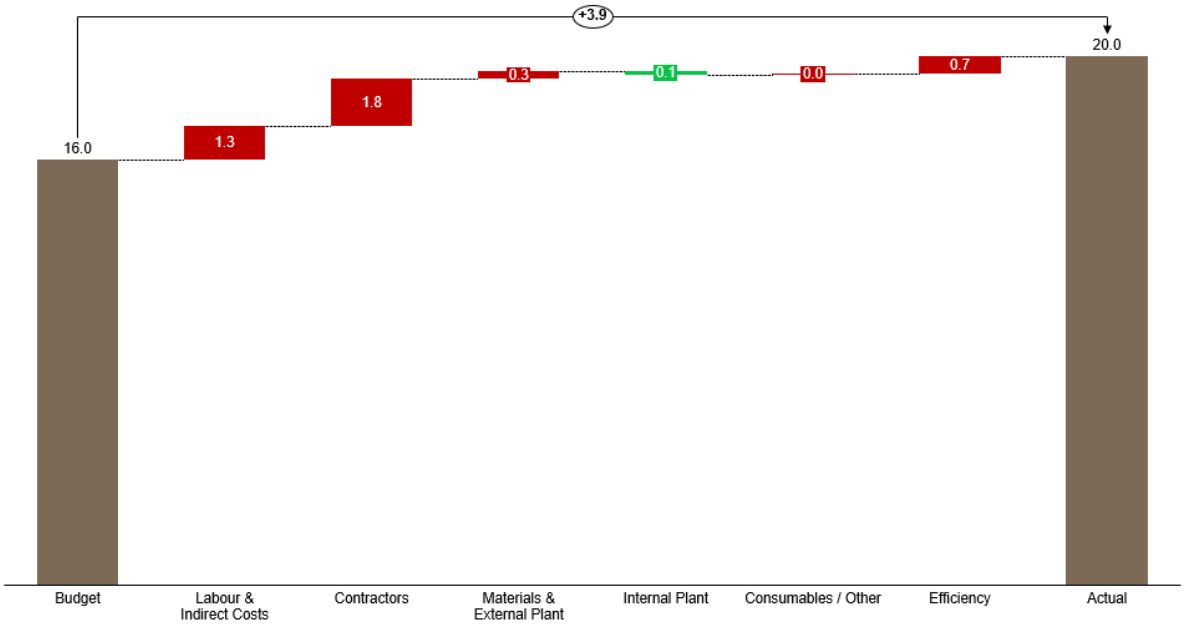


Aurizon Network has seen an increase in rail repair and rail joint management activities during FY24, with the number of defects increasing c.12% when compared to prior years. These activities are completed by a combination of internal staff, supported by contractors who typically assist with rail

restressing activities for larger repairs and support internal resources to complete required repairs within prescribed timeframes. The increased level of defects has also resulted in an increase in the consumption of materials and related inventory components.

The cost categories driving the increase in Goonyella General Track Maintenance spend compared to the FY24 MSB are outlined in Figure 10 below.

Figure 10 General Track Maintenance – Cost Category Variations - Goonyella



Labour & Indirect Costs

The factors impacting Labour and Indirect Costs have been described in section 1.2 of this submission. The Civil Infrastructure teams in each district are the primary contributors of labour and indirect costs within the General Track maintenance category, and Aurizon Network has incurred additional labour and indirect costs to support labour shortages and higher levels of corrective maintenance.

Contractor Costs

Approximately $0.9m of the increase in Contractor costs was attributable to an extension of the QR Track Geometry Recording Car contract. Aurizon Network experienced a combination of supply chain and hardware delays which delayed the commissioning of ATIS. Consequently, it was necessary to extend the QR Track Geometry Recording arrangement for FY24 to ensure SMS (Safety Management System) standard requirements could be met. Costs associated with the QR Track Geometry Recording Car were not provided for in the FY24 MSB.

Following bushfire warnings issued by the Bureau of Meteorology in H1 FY24, and substantive vegetation growth resulting from La Nina wet weather, Aurizon Network carried out additional fire and vegetation management activities during FY24. These activities included:

- Preventative fire breaks being graded in various locations throughout the Goonyella system; and
- Additional tree and vegetation management at Black Mountain (Connors Range). Due to the nature and size of the trees and overhanging canopies, specialised arborist contractors were engaged to complete this work.

The FY24 MSB assumed fire and vegetation activities would be delivered by a combination of internal resources and external contractor support. With the increase in corrective maintenance, higher levels of contractor support were required to undertake these activities, using specialised labour, plant and machinery. The preventative fire and vegetation management works resulted in an additional $0.6m contractor spend in FY24 relative to budget.

Materials & External Plant

Aurizon Network incurred additional costs for ballast materials, which are used in various General Track Maintenance activities across the system. This was predominantly driven by higher ballast prices and an increase in corrective activity levels requiring ballast material.

The increase in ballast prices was driven by changes in the external supply market for ballast and quarry materials. During 2022 and 2023, a number of quarries in strategic locations across the CQCN were acquired by an independent construction materials service provider. Since acquisition, prices of ballast have increased by c.17%. Aurizon Network has sought to partially mitigate the pricing risk by implementing a ballast procurement strategy to identify alternate quarry suppliers to reduce reliance on the single entity suppliers.

Additional ballast materials are required to top up stockpiles to support the increased level of maintenance activity. As noted above, there has been an increase in Top & Line spot resurfacing, which may also require ballast to be used to rectify track geometry.

4.3.4 Signalling and Telecoms

Aurizon Network incurred $14.4m in signalling and telecoms maintenance costs; representing an over-spend of $3.5m (+33%) when compared to the approved MSB.

As outlined earlier in this submission, the increased spend in this category has been predominantly driven by the challenges Aurizon Network has experienced in attracting and retaining qualified rail specific electrical resources including:

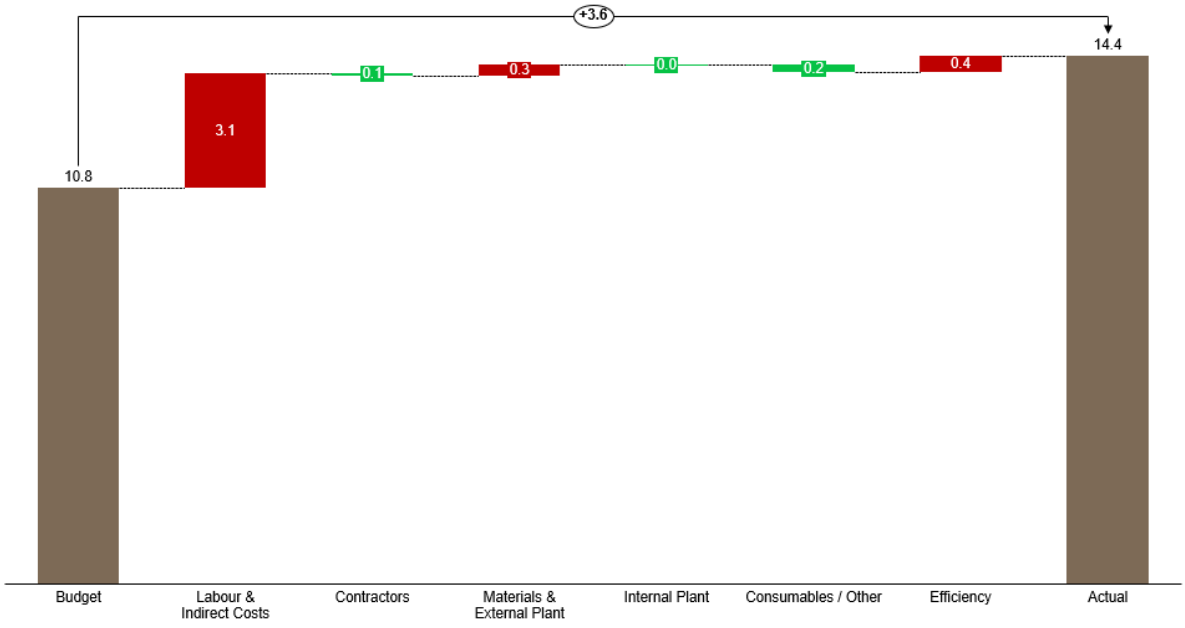
- national skills shortages, particularly for rail specific electrical qualifications;
- attraction and retention challenges with other (i.e. non-Aurizon) projects contributing to competitive labour market conditions for electrical disciplines; and
- impacts of inflation, skills shortages and external market growth on the cost base of our critical external contractors.

Aurizon Network has implemented a number of initiatives and incentives to address these challenges including:

- EA outcomes which have provided additional incentives for electrical trades to align with industry and the competitive market;
- Targeted apprentice and trainee programs for key rail specific electrical trades including Signal Electricians, Systems Maintainers, Traction Linespersons, Traction Electricians and Telecommunications Technicians. Apprentice and trainee FTE currently represent 28% of electrical trade qualified resources across the Electrical discipline; and
- A level of contract labour hire has been maintained to support the ongoing delivery of planned MRSB activities as the apprentices and trainees complete their qualifications. Contract labour hire currently represents 9% of electrical trade qualified resources across the Electrical discipline.

As illustrated in Figure 11 below, the cost variance is driven by additional Labour & Indirect costs due to increased maintenance activity, the cost of additional apprentices, which were recruited earlier than expected and additional labour hire costs.

Figure 11 Signalling and Telecoms Maintenance – Cost Category Variations - Goonyella



4.3.5 Electrical

Aurizon Network incurred $9.0m in electrical maintenance costs; representing an over-spend of $1.7m (+23%) when compared to the approved MSB.

The factors driving additional expenditure in the electric maintenance are consistent with those described in the Signalling and Telecoms section above.

4.3.6 Other Items

Spend on Structures and Facilities, Trackside Systems, Other Civil Maintenance and Other General Maintenance was $0.3m (-3%) lower than the MSB.

4.3.7 Ballast Undercutting Plant Depreciation

Ballast undercutting plant depreciation was $3.3m, which was $0.3m higher than the approved MSB. The allocation of ballast undercutting plant depreciation between Coal Systems is aligned to scope delivery for the year.

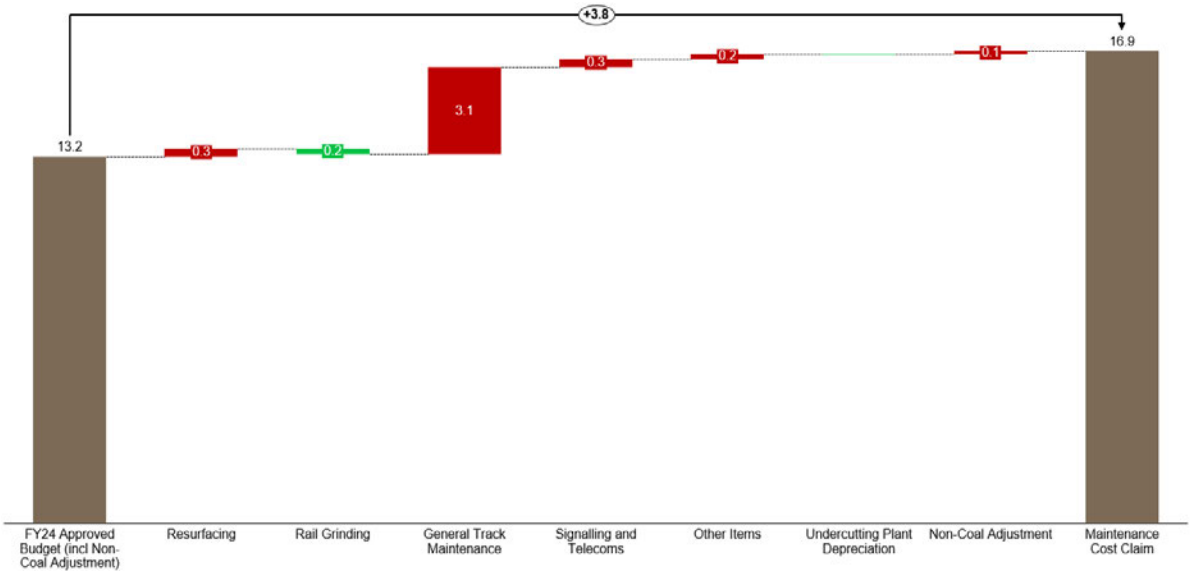
5. Moura System Maintenance Costs Claim

This section outlines the actual Direct Maintenance Costs that Aurizon Network incurred during FY24 in delivering Maintenance Work in the Moura System.

5.1 Direct Maintenance Cost Performance

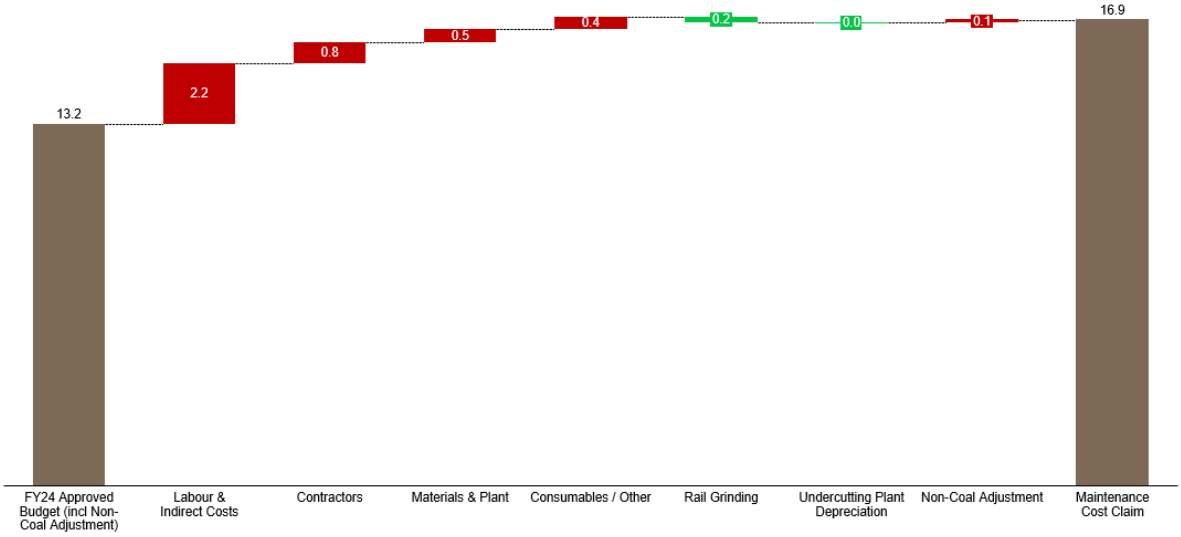
Aurizon Network submits for QCA approval, a Maintenance Cost Claim of $16.9m. After adjusting for non-coal expenditure, Aurizon Network's Maintenance Cost Claim is $3.8m higher than the approved maintenance budget of $13.2m for this Coal System. Aurizon Network has outlined cost variances by Maintenance Item and Cost Category in Figure 12 and Figure 13 below.

Figure 12 Moura System Maintenance Costs Incurred ($m)



Maintenance cost variances by cost category are summarised in Figure 13 below.

Figure 13 Moura System Maintenance Cost variance by cost category



Aurizon Network has assessed its actual maintenance costs incurred against the Approved MSB, taking into consideration the materiality thresholds specified in UT5, 7A.11.5(f)(ii)(B).

Table 10 Maintenance cost materiality thresholds

Legend:	
Consistent	Variation from Approved MSB is within +/- $2m materiality threshold.
Departed	Variation from Approved MSB exceeds +/- $2m materiality threshold.

The following table outlines whether Aurizon Network has remained consistent with or has departed from the approved MSB. In assessing the Maintenance Costs Claim (as per clause 7A.11.5) for the Moura System, the QCA should have regard to the total maintenance budget in aggregate, as outlined in Table 11 below.

Table 11 Moura System Maintenance Costs – Comparison to Approved Budget ($m)

Maintenance Item ($m)	Maintenance Costs Incurred	Approved Budget	Cost Variance	Consistent or Departed
Resurfacing	**1.9**	**1.6**	**0.3**	
Mainline	*1.7*	*1.6*	*0.2*	
Turnout	*0.2*	*0.1*	*0.1*	
Rail Grinding	**1.1**	**1.3**	**(0.2)**	
Mainline	*0.9*	*1.1*	*(0.2)*	
Turnout	*0.2*	*0.3*	*(0.0)*	
Level Crossing	--	--	--	
General Track Maintenance	**9.0**	**5.9**	**3.1**	
General Track	*8.8*	*5.8*	*3.0*	
Track Recording	*0.2*	--	*0.2*	
Ultrasonic Testing	*0.0*	*0.0*	*(0.0)*	
Signalling and Telecoms	**2.5**	**2.2**	**0.3**	
Signalling Corrective	*0.9*	*0.8*	*0.1*	
Signalling Preventative	*1.2*	*1.1*	*0.1*	
Telecoms Corrective	*0.1*	*0.1*	*0.0*	
Telecoms Preventative	*0.4*	*0.3*	*0.1*	
Other Items	**2.4**	**2.3**	**0.2**	
Structures and Facilities	*0.8*	*0.9*	*(0.0)*	
Trackside Systems	*0.3*	*0.3*	*0.0*	
Other Civil Maintenance	*0.9*	*0.9*	*0.0*	
Other General Maintenance	*0.4*	*0.2*	*0.2*	
Sub-Total	**17.0**	**13.3**	**3.7**	
Ballast Undercutting Plant Depreciation	--	--	--	
Non-Coal Adjustment	(0.1)	(0.2)	0.1	
Maintenance Cost Claim	**16.9**	**13.2**	**3.8**	

5.2 Scope of Maintenance Work Undertaken

This section outlines the scope of Maintenance Work undertaken for those items where scope is specified within the FY24 MSB.

Table 12 Moura System Scope Delivered

Maintenance Item	Scope Delivered	RIG Approved Scope	Scope Variance	% Variance
Resurfacing				
Mainline	235	170	65	38%
Turnout	19	10	9	90%
Rail Grinding				
Mainline	[redacted]	[redacted]	[redacted]	[redacted]
Turnout	[redacted]	[redacted]	[redacted]	[redacted]
Level Crossing	--	--	--	--
General Track Maintenance				
Track Recording	515	--	515	--
Ultrasonic Testing	354	348	6	2%

5.3 Commentary on annual performance for Maintenance Items

Aurizon Network has delivered Maintenance Work in the Moura System in a manner that is consistent with its legislative and regulatory obligations. By giving effect to the asset management plans and strategies[10] that underpinned the approved MSB, Aurizon Network has ensured compliance with these obligations.

As agreed with the RIG, the aggregate maintenance cost claim for the Moura System is to be assessed against the Approved MSB, taking into consideration the materiality thresholds specified in UT5, 7A.11.5(f)(ii)(B). Aurizon Network's Maintenance Costs Claim for the Moura System in aggregate exceeds the materiality threshold. Despite this, the variance between the FY24 budget and Aurizon Network's actual costs is driven by General Track Maintenance activities (see Figure 12 above).

Aurizon Network has outlined the key factors impacting General Track Maintenance performance in the Moura System below, and considers that it was prudent, efficient and necessary to incur additional costs during FY24 so as to ensure that the required maintenance work could be delivered.

Aurizon Network considers that the Maintenance Cost Claim for all other maintenance activities within the Moura System are materially consistent with the FY24 MSB, reflect the prudent and efficient costs incurred by Aurizon Network in delivering the Approved MSB for the Moura System, and consequently, should be approved by the QCA.

Aurizon Network has provided some commentary on specific maintenance categories below.

[10] The asset management plans and strategies are derived from Aurizon Network's Asset Maintenance and Renewal Policy, which in turn is the manifestation of Aurizon Network's practical application of the Safety Management System.

5.3.1 Resurfacing

Aurizon Network delivered the resurfacing scope of works as outlined in the approved MSB. Scope completed for:

- Mainline resurfacing was higher than the approved MSB with 235km completed. This represents an additional 65km (+38%); and
- Turnout resurfacing was also higher than approved MSB with 19 turnouts completed, compared to a budgeted scope of 10 (+90%).

In delivering the additional scope, Aurizon Network incurred an additional $0.3m in costs (+18%). The additional resurfacing scope delivered during the year was in response to track condition.

5.3.2 Rail Grinding

During FY24, Aurizon Network completed:

- [redacted] km of mainline rail grinding; [redacted] than the approved MSB; and
- rail grinding on [redacted] turnouts; [redacted] than the approved MSB.

Total rail grinding costs incurred were $0.2m (-16%) below budget, reflecting the reduction in scope.

5.3.3 General Track Maintenance

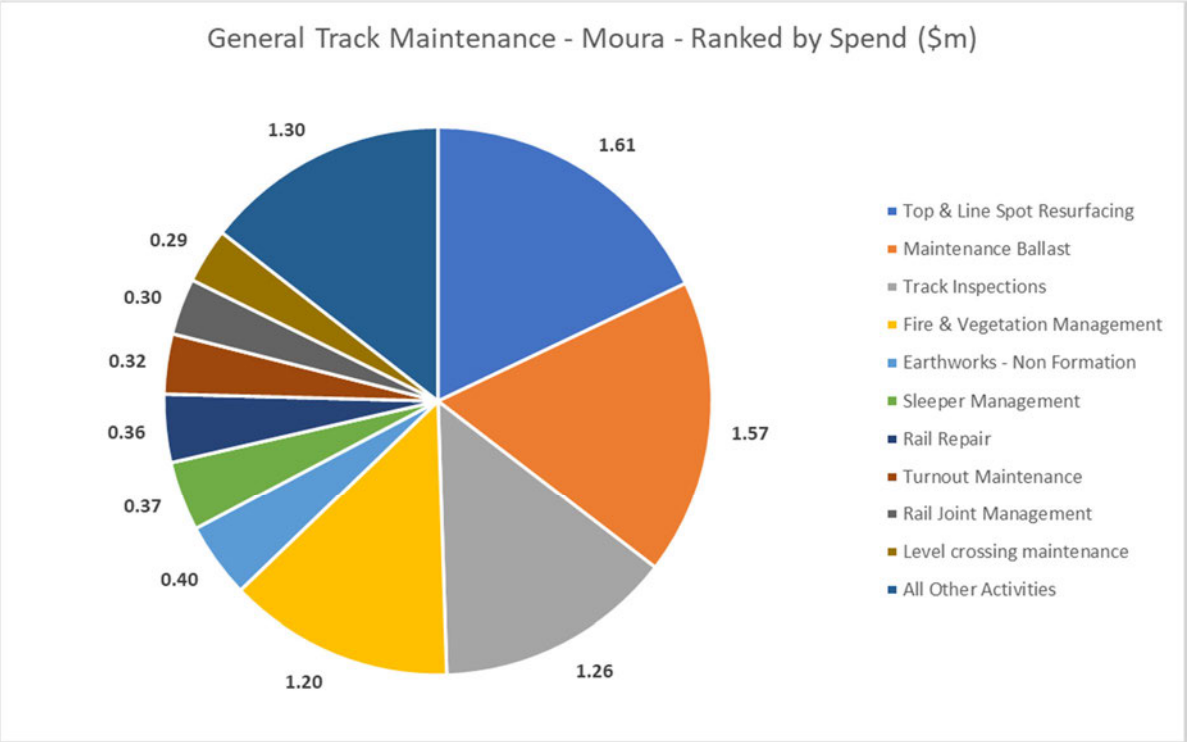
The tonnage profile and relatively low number of Train Services compared to other systems means that the Moura System can achieve the required throughput, with less frequent asset intervention. As a result, the Moura system relies on a higher proportion of planned corrective maintenance. The combination of aging infrastructure, increased railings in FY24 compared to prior periods and the sustained La Nina wet weather has resulted in higher corrective maintenance across several activities, primarily within the General Track maintenance category.

The General Track Maintenance item is comprised of a multitude of activities, including planned corrective maintenance to rectify defects found during planned inspections on rail, sleepers, turnouts, ballast, formation and related off track infrastructure (including embankments, drainage and access roads).

Aurizon Network incurred costs of $9.0m delivering General Track Maintenance activities in Moura; representing an over-spend of $3.1m (+53%) in aggregate.

The composition of the General Track Maintenance spend in Moura during FY24 is provided in Figure 14 below. Compared to the prior year (FY23), Aurizon Network incurred additional expenditure in Maintenance Ballast ($1.2m), Top and Line Spot Resurfacing (+$0.5m), Fire and Vegetation Management (+$0.4m) and Rail Joint Management (+$0.3m).

Figure 14 General Track Maintenance Spend by Activity – Moura ($m)



Top and Line Resurfacing and Maintenance Ballast are the activities representing the highest overall spend in the General Track Maintenance category for this system.

Spend for these activities is driven by track geometry defects, which increased by c.5% compared to prior periods – mainly during H1 FY24. As illustrated by Figure 15 below, these defects can be attributable to:

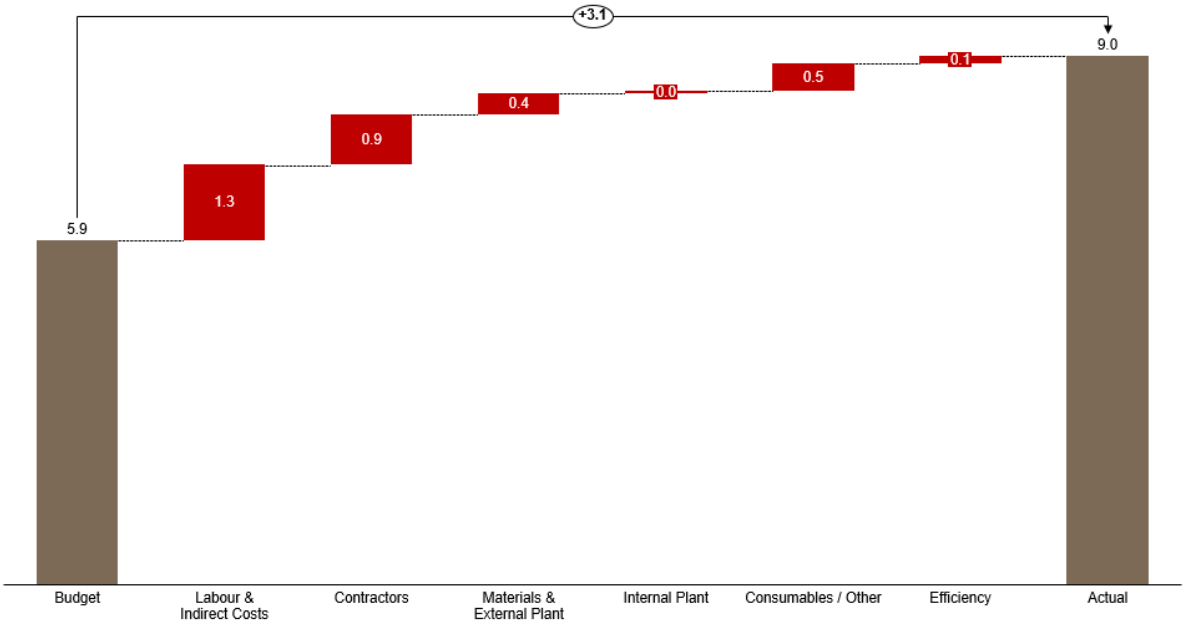
- sustained wet weather following on from H2 FY23; and
- shrink and swell ground conditions post wet weather, causing large cracks to appear on the formation with heavier clay properties.

Figure 15 (Left) Ground Cracks (~400mm) next to formation in Callide branch. (Right) Poor track geometry at Dakenba 12 points.

These defects require rectification within certain prescribed timeframes as set out in the Civil Engineering Track Standards. Top & line spot resurfacing is completed to return the track within the design geometry limits, and involves manual or mechanically assisted processes, including small spot tamping machinery, excavators with spot tamping heads and smaller portable tampers. These activities are predominately completed by internal staff, but contractors may be engaged when specialised plant is required.

The cost categories driving the increase in Moura General Track Maintenance spend compared to the FY24 MSB are outlined in Figure 16 below.

Figure 16 General Track Maintenance – Cost Category Variations – Moura



Labour & Indirect Costs

The factors impacting Labour and Indirect Costs have been described in section 1.2 of this submission. The Civil Infrastructure teams in each district are the primary contributors of labour and indirect costs within the General Track maintenance category, and Aurizon Network has incurred additional labour and indirect costs to support labour shortages and higher levels of corrective maintenance, particularly for rail defects.

Contractor Costs

Approximately $0.2m of the increase in Contractor costs was attributable to an extension of the QR Track Geometry Recording Car contract. Aurizon Network experienced a combination of supply chain and hardware delays which delayed the commissioning of ATIS. Consequently, it was necessary to extend the QR Track Geometry Recording arrangement for FY24 to ensure SMS (Safety Management System) standard requirements could be met. Costs associated with the QR Track Geometry Recording Car were not provided for in the FY24 MSB.

Following bushfire warnings issued by the Bureau of Meteorology in H1 FY24, and substantive vegetation growth resulting from La Nina wet weather, Aurizon Network carried out additional fire and vegetation management activities during FY24. The FY24 MSB assumed Fire & Vegetation activities would be delivered by a combination of internal resources and external contractor support. With the increase in levels of corrective maintenance work to be undertaken by internal resources, higher levels of contractor support were required undertake these activities, using specialised labour, plant and machinery.

Materials and External Plant

Aurizon Network incurred additional costs for ballast materials, which are used in various General Track Maintenance activities across the system. This was predominantly driven by higher ballast prices and an increase in corrective activity levels requiring ballast material.

The increase in ballast prices was driven by changes in the external supply market for ballast and quarry materials. During 2022 and 2023, a number of quarries in strategic locations across the CQCN were acquired by an independent construction materials service provider. Since acquisition, prices of ballast have increased by c.17%. Aurizon Network has sought to partially mitigate the pricing risk by implementing a ballast procurement strategy to identify alternate quarry suppliers to reduce reliance on the single entity suppliers.

Additional ballast materials were required to top up stockpiles to support the increased level of maintenance activity. As noted above, there has been an increase in top & line spot resurfacing, which may also require additional ballast to rectify track geometry.

Consumables

Aurizon Network incurred additional consumables costs relative to budget as a result of increased corrective activity levels. This included additional costs of transporting ballast material to site, track clean-up and rail lubrication activities, and consumables relating to track inspection, sleeper management, and top & line spot resurfacing.

5.3.4 Signalling and Telecoms

Aurizon Network incurred $2.5m in signalling and telecoms maintenance costs; representing an over-spend of $0.3m (13%) in aggregate when compared to the approved MSB.

As described in section 1.2 of this submission, Aurizon Network incurred increased spend in this category as a result of EA outcomes pertaining to skilled electrical resources, attraction and retention initiatives, and onboarding of additional apprentices.

5.3.5 Other Items

Spend on Structures and Facilities, Trackside Systems, Other Civil Maintenance and Other General Maintenance was $0.2m (+8%) higher than the MSB.

This over-spend was attributable to the Other Civil Maintenance category, specifically, additional contractor spend for the rectification of mud hold defects.

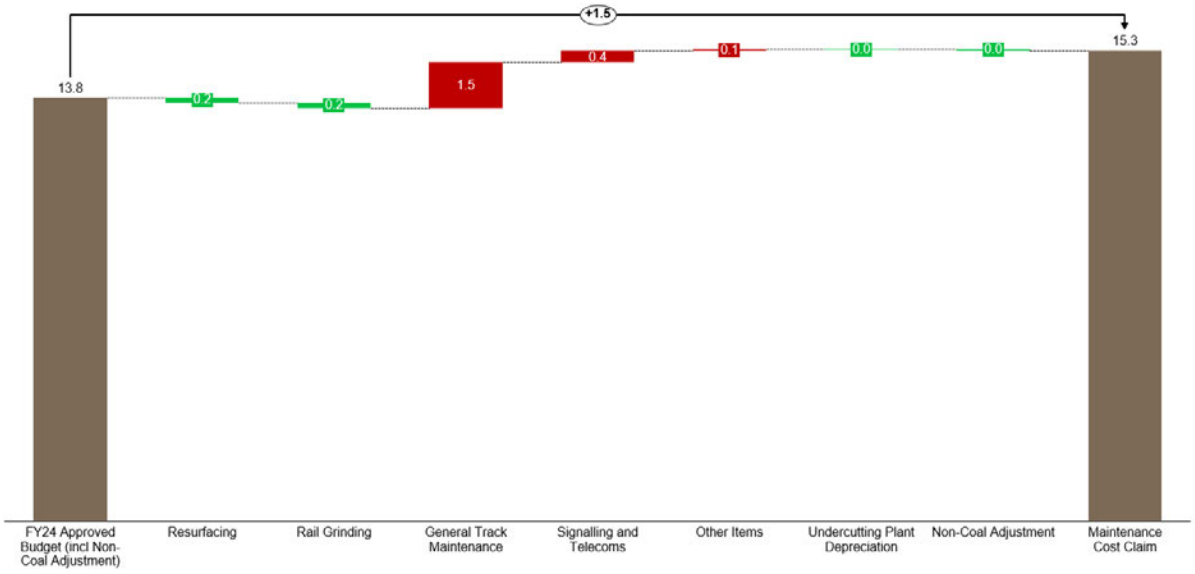
6. Newlands System and GAPE Maintenance Costs Claim

This section outlines the actual Direct Maintenance Costs that Aurizon Network incurred during FY24 in delivering Maintenance Work in the Newlands System and GAPE.

6.1 Direct Maintenance Cost Performance

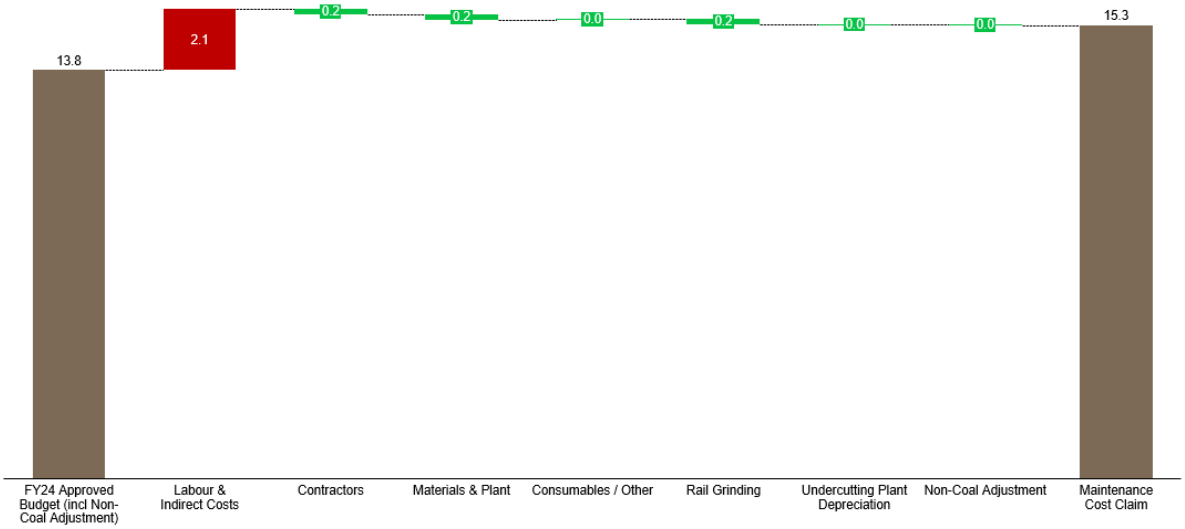
Aurizon Network submits for QCA approval, a Maintenance Cost Claim of $15.3m. After adjusting for non-coal expenditure, Aurizon Network's Maintenance Cost Claim is $1.5m higher than the approved maintenance budget of $13.8m for this Coal System. Aurizon Network has outlined cost variances by Maintenance Item and Cost Category in Figure 17 and Figure 18 below.

Figure 17 Newlands System and GAPE Maintenance Costs Incurred ($m)



Maintenance cost variances by cost category are summarised in Figure 18 below.

Figure 18 Newlands System Maintenance Cost variance by cost category



The variance was primarily driven by higher Labour and Indirect Costs. Predominantly impacting the General Track Maintenance category. Aurizon Network has described the key factors impacting these costs in section 1.2 of this submission.

Aurizon Network has assessed its actual maintenance costs incurred against the Approved MSB, taking into consideration the materiality thresholds specified in UT5, 7A.11.5(f)(ii)(B).

Table 13 Maintenance cost materiality thresholds

Legend:	
Consistent	Variation from Approved MSB is within +/- $2m materiality threshold.
Departed	Variation from Approved MSB exceeds +/- $2m materiality threshold.

The following table outlines whether Aurizon Network has remained consistent with or has departed from the approved MSB. In assessing the Maintenance Costs Claim (as per clause 7A.11.5) for the Newlands System and GAPE, the QCA should have regard to the total maintenance budget in aggregate, as outlined in Table 14 below.

Table 14 Newlands System and GAPE Maintenance Costs – Comparison to Approved Budget ($m)

Maintenance Item ($m)	Maintenance Costs Incurred	Approved Budget	Cost Variance	Consistent or Departed
Resurfacing	**1.3**	**1.5**	**(0.2)**	
Mainline	*1.1*	*1.3*	*(0.2)*	
Turnout	*0.2*	*0.2*	*0.0*	
Rail Grinding	**2.3**	**2.4**	**(0.2)**	
Mainline	*1.9*	*2.1*	*(0.2)*	
Turnout	*0.3*	*0.3*	*(0.0)*	
Level Crossing	*0.0*	*0.0*	*(0.0)*	
General Track Maintenance	**5.9**	**4.4**	**1.5**	
General Track	*5.5*	*4.3*	*1.3*	
Track Recording	*0.2*	*--*	*0.2*	
Ultrasonic Testing	*0.2*	*0.2*	*0.0*	
Signalling and Telecommunications	**3.9**	**3.5**	**0.4**	
Signalling Corrective	*1.1*	*1.1*	*(0.0)*	
Signalling Preventative	*2.0*	*1.8*	*0.2*	
Telecoms Corrective	*0.1*	*0.0*	*0.0*	
Telecoms Preventative	*0.8*	*0.6*	*0.2*	
Other Items	**2.1**	**2.0**	**0.1**	
Structures and Facilities	*1.0*	*1.0*	*0.0*	
Trackside Systems	*0.4*	*0.3*	*0.1*	
Other Civil Maintenance	*0.2*	*0.2*	*(0.0)*	
Other General Maintenance	*0.5*	*0.5*	*(0.0)*	
Sub-Total	**15.4**	**13.8**	**1.6**	
Ballast Undercutting Plant Depreciation	--	--	--	

Maintenance Item ($m)	Maintenance Costs Incurred	Approved Budget	Cost Variance	Consistent or Departed
Non-Coal Adjustment	(0.1)	(0.0)	(0.0)	
Maintenance Cost Claim	**15.3**	**13.8**	**1.5**	

6.2 Allocation of costs between Newlands and GAPE

Aurizon Network has allocated the Maintenance Cost Claim between the Newlands System and GAPE. The allocation methodology reflects the proportion of Gross Tonne Kilometres (GTK) railed by Newlands and GAPE Train Services during the year. The GTK for GAPE Train Services reflects the distance railed between North Goonyella Junction and Abbot Point.

The cost allocations to the Newlands System and GAPE are outlined in Table 15 below.

Table 15 Maintenance Cost Allocation to Newlands and GAPE

System	FY24 MRSB	Maintenance Costs Incurred	Non-Coal Adjustment	Maintenance Cost Claim
Newlands	5.1	6.5	(0.04)	**6.5**
GAPE	8.7	8.9	(0.05)	**8.9**
Total	**13.8**	**15.4**	**(0.1)**	**15.3**

6.3 Scope of Maintenance Work Undertaken

This section outlines the scope of Maintenance Work undertaken for those items where scope is specified within the FY24 MSB.

Table 16 Newlands System and GAPE Scope Delivered

Maintenance Item	Scope Delivered	RIG Approved Scope	Scope Variance	% Variance
Resurfacing				
Mainline	108	188	(80)	(43%)
Turnout	27	21	6	29%
Rail Grinding				
Mainline	[redacted]	[redacted]	[redacted]	[redacted]
Turnout	[redacted]	[redacted]	[redacted]	[redacted]
Level Crossing	[redacted]	[redacted]	[redacted]	[redacted]
General Track Maintenance				
Track Recording	663	–	663	–
Ultrasonic Testing	1,648	1,618	30	2%

6.4 Commentary on annual performance for Maintenance Items

Aurizon Network has delivered Maintenance Work in the Newlands System and GAPE in a manner that is consistent with its legislative and regulatory obligations. By giving effect to the asset

management plans and strategies[11] that underpinned the approved MSB, Aurizon Network has ensured compliance with these obligations.

There are no categories of maintenance within Aurizon Network's Maintenance Costs Claim for the Newlands System and GAPE, with a difference in a material respect when compared to the corresponding item in the approved MSB. Consequently, Aurizon Network considers that the QCA should approve the Newlands Maintenance Costs Claim.

Aurizon Network has provided some commentary on specific maintenance categories below.

6.4.1 Resurfacing

During FY24, Aurizon Network completed:

- 108km of mainline resurfacing scope; 80km (-43%) lower than the approved MSB; and
- resurfacing on 27 turnouts; 6 (29%) more than the MSB.

Aurizon Network delivered the resurfacing scope for $1.3m, which was $0.2m (-12%) lower than the approved MSB.

During FY24 mainline resurfacing scope was deferred in order to prioritise additional turnout resurfacing.

6.4.2 Rail Grinding

The scope of rail grinding works delivered was materially in line with the approved MSB.

- [redacted] km of mainline rail grinding was completed; [redacted] than the approved MSB;
- Rail grinding was completed on [redacted] turnouts; which was consistent with the approved MSB; and
- Rail grinding was completed on [redacted] level crossings; [redacted] than the MSB.

In February 2024, a machine breakdown meant that some scope was unable to be delivered. This was unable to be replanned before the end of FY24. Total rail grinding costs incurred were $2.3m; $0.2m (-7%) below than budget.

6.4.3 General Track Maintenance

Aurizon Network incurred $5.9m delivering General Track Maintenance activities; representing an over-spend of $1.5m (+34%) in aggregate.

This over-spend was attributable to additional corrective maintenance activities relating to Rail Repair, fire and vegetation management, top and line resurfacing, rail lubrication and track inspection activities.

6.4.4 Signalling and Telecoms

Aurizon Network incurred $3.9m in signalling and telecoms maintenance costs; representing an over-spend of $0.4m (10%) in aggregate when compared to the approved MSB.

[11] The asset management plans and strategies are derived from Aurizon Network's Asset Maintenance and Renewal Policy, which in turn is the manifestation of Aurizon Network's practical application of the Safety Management System.

The increased expenditure was driven by the impact of higher labour costs to address critical skills shortages, attraction and retention initiatives, and trade/apprentice ratios.

6.4.5 Other Items

Spend on Structures and Facilities, Trackside Systems, Other Civil Maintenance and Other General Maintenance was $0.1m (3%) higher than the MSB.

7. Consistency with the Maintenance Objectives

Operational performance outcomes are determined by a range of inter-related factors. An effective and efficient maintenance regime is a key enabler for operational performance. In delivering maintenance and asset renewal activity in each Coal System, Aurizon Network has had regard to the Maintenance Objectives outlined in Clause 7A.11.1. Specifically, Aurizon Network has:

- sought to ensure that Committed Capacity is delivered;
- appropriately balanced cost, reliability, and performance of the Rail Infrastructure; and
- wherever reasonably possible, coordinated outages with other Supply Chain Participants with a view to maximising throughput.

In line with our commitment to continuous improvement, Aurizon Network seeks to identify, trial, and implement various initiatives with the objective of improving the delivery of the maintenance and/or renewal programs. Table 17 provides examples to illustrate how Aurizon Network is seeking to promote the Maintenance Objectives in each Coal System through its Continuous Improvement Program.

Please note that some of the examples outlined below are relevant to multiple Coal Systems.

Table 17 Examples of Aurizon Network's actions to promote the Maintenance Objectives

Initiative	Description
Location Based Maintenance	During May 24, Aurizon Network commenced the location-based maintenance initiative. Historically, plant maintenance resources (from the Mechanised Production team) were trained and dedicated to maintaining either the ballast undercutting machine, resurfacing machines or other plant. These dedicated staff were required to travel to their allocated machine to complete the necessary works. The new initiative will see plant maintenance resources maintaining all machine types and is expected to reduce the requirement for teams to travel to specific machines in order to undertake maintenance activities. Upskilling of maintenance teams has commenced and during May and June, approximately 50% of the resources travelled to perform maintenance with the remainder performing works in their home depot. Over the next 12 months upskilling of maintenance resources will continue with the overall aim to minimise travelling and accommodation costs when performing plant maintenance activities.
ATIS	The Automated Track Inspection System (**ATIS**) provides asset condition data that assists with the early identification of asset condition issues and allows for timely intervention and rectification. The Track Geometry Measurement System (**TGMS**), which measures track geometry condition is now in production in all CQCN systems; The Wire Geometry Measurement System (**WGMS**), which measures the alignment of overhead wire relative to track position is now in production in both the Goonyella and Blackwater systems. All production data captured through both measurement systems is being fed into the graphical user interface application which is being actively reviewed by the Network Asset Management team and informing planned track and overhead wiring maintenance activities. Aurizon Network will present options for monitoring non-Aurizon operations and slow-speed track sections to the RIG Producer Group in Q1 FY25.

Initiative	Description
FY25 Initiatives	Initiatives to be progressed during FY25 include: • Vendor Review – which among other matters will review: – contractor spend to identify areas of opportunity, including during non-closure periods; – contract labour hire and apprentice/trainee qualification timeframes. • Jilalan Control Systems nightshift roster – which will assess impact of agreed rostering changes with the potential to reduce annual overtime. • Standard Work – which will review key standard work activities executed across the Civil discipline.

To support the QCA's prudency and efficiency assessment of maintenance costs, Aurizon Network has provided a summary of key operational performance data. The intent of providing this information is to illustrate how Aurizon Network's maintenance performance is helping to realise the Maintenance Objectives.

7.1 Tonnage Throughput

As illustrated in Table 18 below, aggregate tonnage for the CQCN was approximately 2.0 million net tonnes higher in FY2024 compared to the prior year.

Table 18 Tonnage - FY24 vs FY23 – Million Net Tonnes

System	FY24	FY23	Variance
Blackwater	54.7	52.4	▲
Goonyella	104.1	107.0	▼
Moura	14.9	12.9	▲
Newlands	19.5	20.7	▼
GAPE	16.3	14.6	▲
Total CQCN	**209.6**	**207.6**	▲

During FY24, Goonyella performance was significantly impacted by Force Majeure events, which saw the number of cancellations increase compared to the previous year. The most significant events included a dewirement at Hay Point due to wildlife, severe summer storms in January 2024 and Cyclone Kirrily.

The Moura System achieved a tonnage record in FY24 delivering 14.9 million net tonnes, as did the combined throughput for the Newlands shared rail corridor (reflecting both Newlands and GAPE services).

7.2 Below Rail Cancellations

Below rail cancellation trends provide an indication of how the network's performance impacts train operations. They can also be an early indicator of whether the maintenance and renewals investment is set at the right level.

As illustrated in Table 19, Below Rail cancellations (expressed as a proportion of agreed services) represent a low proportion of overall cancellations the FY24.

Table 19 Below Rail Cancellation % - FY24 vs FY23

System	FY24	FY23	Variance
Blackwater	**2.0%**	2.3%	▼
Goonyella	**4.5%**	2.6%	▲
Moura	**3.5%**	1.6%	▲
Newlands / GAPE	**0.8%**	1.7%	▼

At an individual system level, FY24 saw the below rail cancellation % decrease in Blackwater and Newlands/GAPE relative to FY23.

The below rail cancellation % for both the Goonyella and Moura systems increased compared to FY23.

FY24 saw an increase in below rail cancellations, delays and TSR for the Goonyella System, compared to the prior year. While infrastructure related incident numbers were relatively stable across FY24, a significant broken rail in January 2024, five dewirements and several OHLE events adversely impacted Goonyella System performance.

For the Moura System, below rail cancellation performance deteriorated as a result of two 'high impact' broken rail incidents.

The graphs below illustrate the number of cancellations by cause between April 2023 to June 2024.

Figure 19 Blackwater System – Cancellations

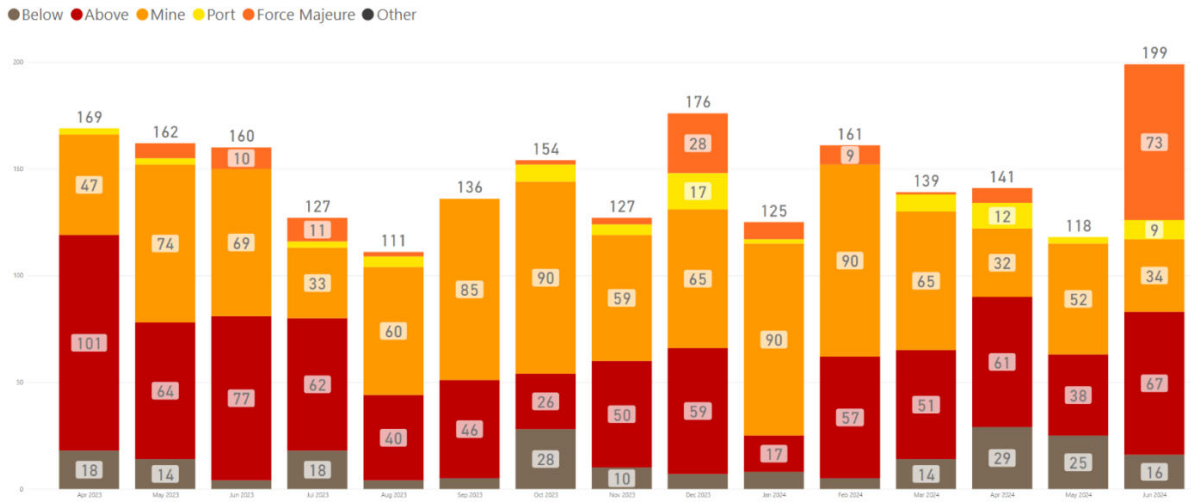


Figure 20 Goonyella System – Cancellations

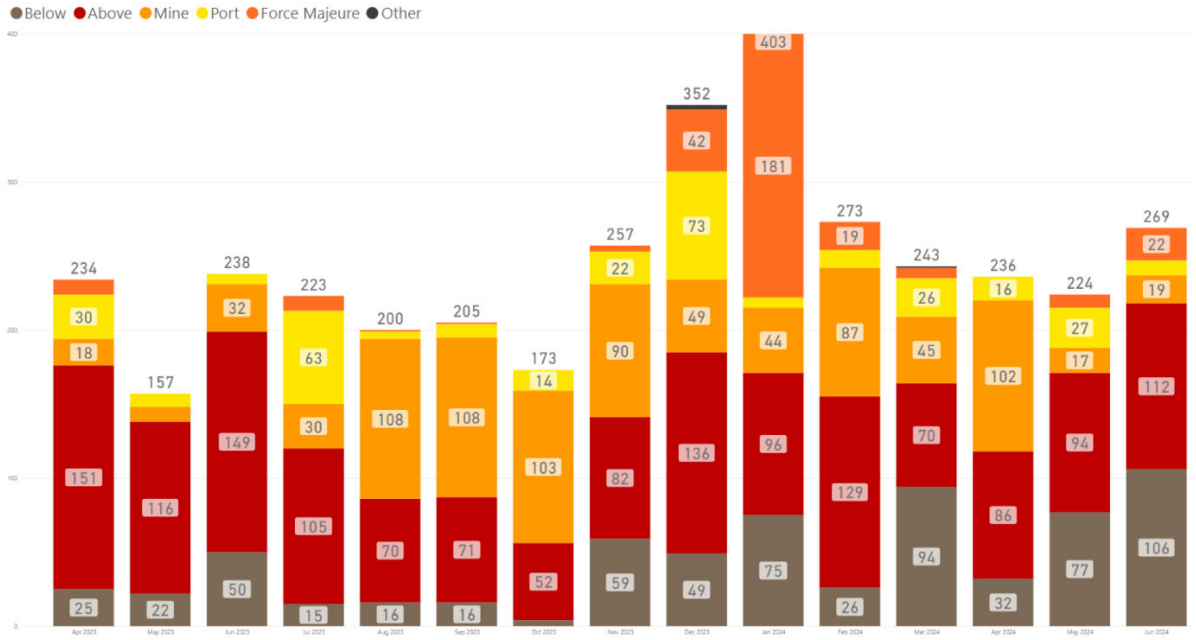


Figure 21 - Moura System – Cancellations

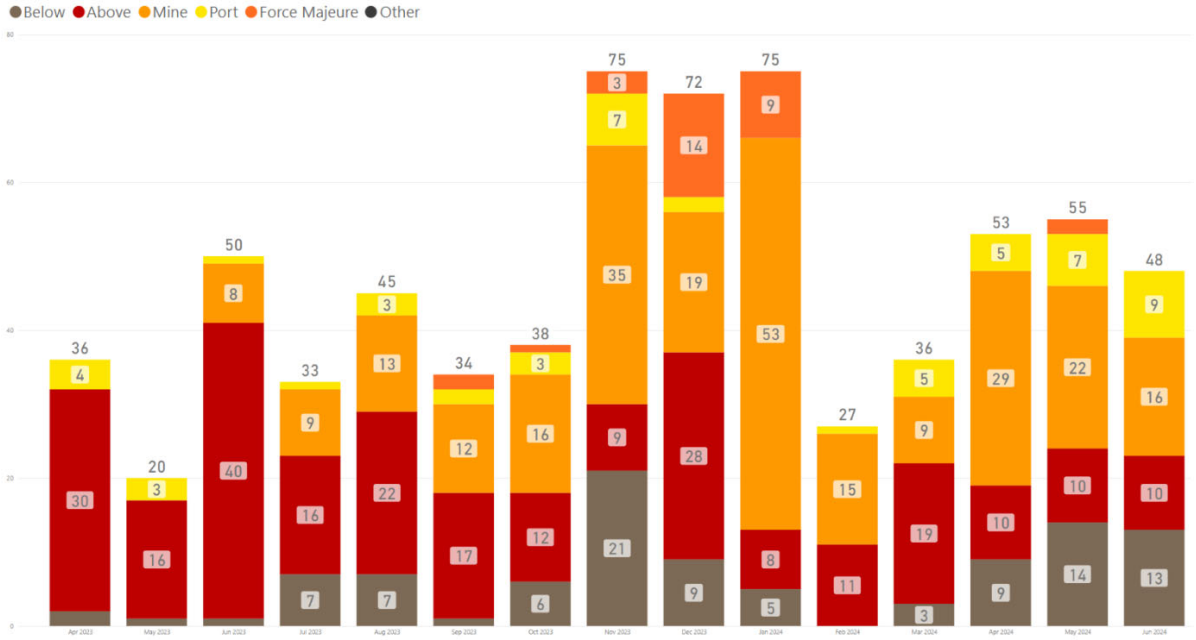
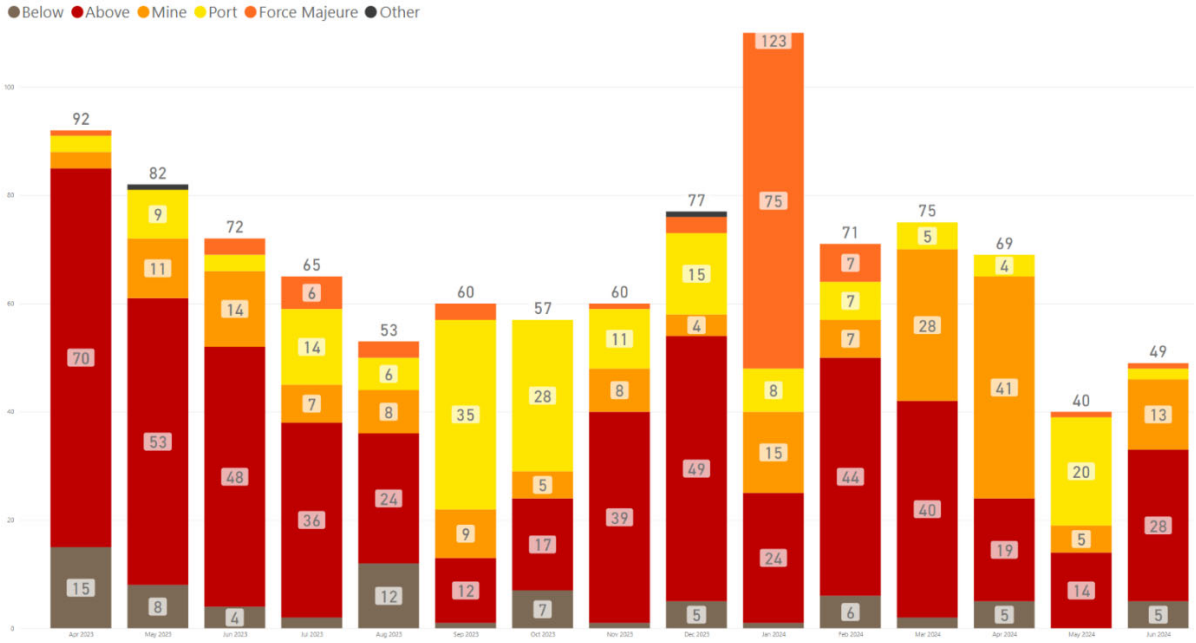


Figure 22 – Newlands System and GAPE – Cancellations



7.3 Temporary Speed Restrictions

A Temporary Speed Restriction (**TSR**) is an operational control used to ensure continuity of safe operations where the rail infrastructure is impacted by a fault, defect, incident or where the risk of a defect / fault is exacerbated due to environmental factors (for example, temperature related rail stress). A TSR allows train services to keep running, albeit at a reduced speed, until such time as the fault or defect can be rectified in a planned manner, or where the risk reduces.

Given the impact that speed restrictions have on train cycle times, network congestion and useable capacity in a Coal System, one of Aurizon Network's asset management strategies is to focus on the removal of speed restrictions applied in critical locations and/or those which have a high impact. In practice, this means that Aurizon Network would prioritise the rectification of the underlying fault, defect or incident which in turn, allows the TSR to be lifted. This maintenance practice should see a reduction in delays due to reliability and track defects and provide increased operational recovery options through improvements in train cycle times.

Aurizon Network's performance is illustrated below through a comparison of TSR delay minutes year on year. To normalise the results across individual Coal Systems, TSR Delay Minutes are expressed in "minutes per 100 train kilometres" within Table 20.

Table 20 TSR Delay Minutes per 100 Train Km - FY24 vs FY23

System	FY24	FY23	Variance
Blackwater	**5.1**	9.0	▼
Goonyella	**6.0**	5.1	▲
Moura	**9.9**	13.6	▼
Newlands / GAPE	**2.3**	2.9	▼

Aurizon Network saw a deterioration (increase) in TSR delay minutes in the Goonyella Coal System. TSR delay minute performance in all other Coal Systems improved.