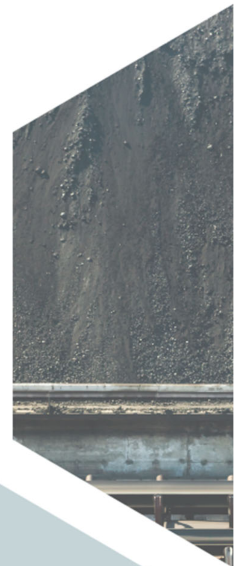

COAL NETWORK CAPACITY CO.

ACAR25

ANNUAL CAPACITY ASSESSMENT REPORT

DATED: 18 June 2025

REDACTED VERSION

Prepared by:

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Contents

1. Preamble

UT5, as approved by the Queensland Competition Authority (QCA), requires capacity assessments to be performed by the Independent Expert (IE) for each of the Central Queensland Coal Network's (CQCN) coal systems, as detailed in *Part 7A: Capacity*.

This is the fourth Annual Capacity Assessment Report (ACAR) since the completion of the Initial Capacity Assessment Report (ICAR), in 2021. The ACAR determines the Deliverable Network Capacity (DNC) for each coal system of the CQCN.

This document should be read in conjunction with the 2025 System Operating Parameters (SOP) which set out the assumptions on the operation of each element of the coal supply chain.

1.1 Deliverable Network Capacity

The definition of DNC is taken from Part 7A.2 of UT5. This definition is important for stakeholders to consider and understand, as it directs the IE to consider and determine capacity in a particular way. This requirement drives an assessment of capacity in the CQCN's rail systems that is likely to differ from other estimates of capacity undertaken for other purposes. In particular, the IE understands that the intention of the UT5 definition is primarily to ensure that capacity is assessed in a practical "deliverable" sense, rather than a more theoretical view of capacity, and this is the underlying basis of the ACAR.

1.2 Annual Capacity Assessment

UT5 outlines requirements that the IE must consider in undertaking the ACAR, which include:

- Consider whether any variation of the SOP is required, provided that any amendments to the SOP:
    - include consideration of the factors set out in the definition of DNC;
    - would be consistent with the applicable approved maintenance Renewals and strategy budget; and
    - would not place Aurizon Network (AN) in breach of its obligations under UT5 or any access agreement.
- Seek to consult with and receive submissions from AN and industry stakeholders on the proposed SOP.
- Set out the SOP for each coal system having regard to the way in which each coal system operates in practice.

The ACAR, and associated SOP, prepared by the IE, must report on the DNC of each coal system over the capacity assessment period. The ACAR must include information regarding:

- Assumptions that the IE has made in interpreting the definitional factors that DNC is characterised by;
- Assumptions that the IE has made in developing the SOP and other modelling related assumptions;
- The DNC of each coal system's mainline and branch lines; and
- Constraints that reduce, or are likely to reduce, DNC of each coal system.

UT5 defines that capacity is to be measured in train paths (a return train journey). CNCC has included in the ACAR for reference purposes the equivalent capacity in tonnes based on the median payload of trains in each system.

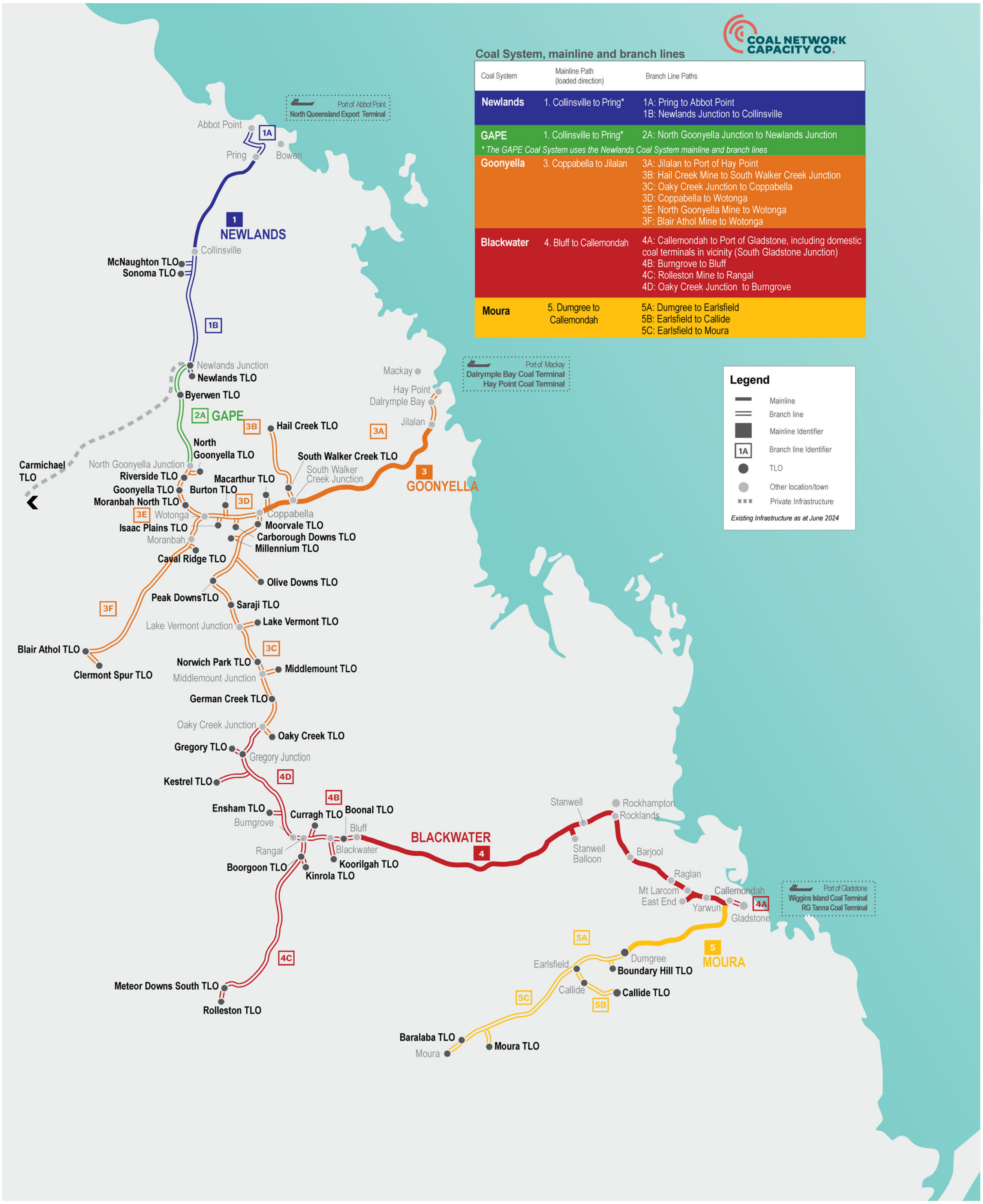
The outcomes of the IE's assessment must be reported to the QCA and AN in a redacted and unredacted form and to the Chair of the Rail Industry Group (RIG) in a redacted form. QCA and AN will publish the redacted versions on their respective websites.

The capacity assessment period for ACAR25 has been determined as the five financial years FY26 to FY30 inclusive i.e. 1 July 2025 to the 30 June 2030.

1.3 Dynamic Simulation Model (Model)

CNCC and the IE determines the DNC of each coal system within the CQCN (see map in **Figure 1** below) primarily through the use of a dynamic simulation Model which is based on AnyLogic modelling software.

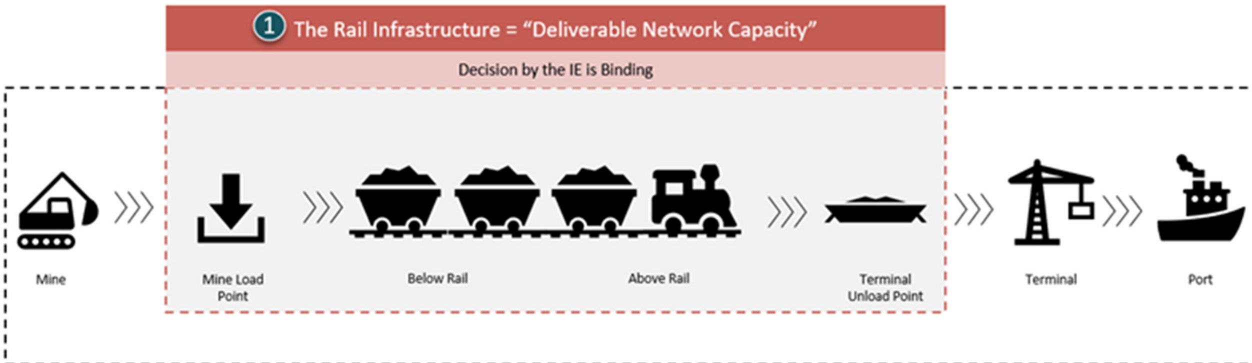
Figure 1 - CQCN Mainline and Branch lines



The scope of the Model reflects the DNC definition and considers activities at and between the boundaries of:

- Coal flow into wagons at Train Loadouts (TLO); and
- Coal flow out of wagons at inloaders and includes the components as outlined in **Figure 2.**

Figure 2 - Deliverable Network Capacity Boundaries



This Model scope means that the Model does not determine the capacity of the entire system or coal chain. In particular, the Model does not consider elements of the terminal operations beyond the inloaders and does not consider the shipping queue or terminal operations in the generation of rail demand within the Model.

There are several general assumptions used in the determination of the DNC:

- The IE has had to exercise judgement on a large range of issues in developing the SOP assumptions and application of these within the Model. These are called out as appropriate in each section of the SOP;
- In general, inputs into the Model, including key data statistical distributions, are generally informed by historical data. The IE has predominantly considered data from January 2021 to December 2024 (where available), however the exact approach varies across the various Model parameters and are outlined in the SOP.

1.4 Information and Redaction

To the extent possible, this document has been prepared on an aggregated and unredacted basis. Where capacity outcomes contain information that is confidential to an access holder, customer, train operator, or terminal operator and is unable to be disclosed, it has been redacted in this document.

Minor rounding differences may occur in this report. Differences can arise between scenarios or sensitivity outcomes due to varying baselines or sequencing of constraints. For example, waterfall changes are assessed against ACAR24 DNC results, whereas sensitivities are evaluated as single input variations against ACAR25 DNC.

2. Executive Summary

The IE has prepared the ACAR which determines the DNC of the CQCN for the capacity assessment period (1 July 2025 to 30 June 2030).

The IE's determination of DNC for FY26 for each system, and the change since ACAR24 is shown in **Figure 3** in train paths***.*** This figure also shows the Committed Capacity and hence the resulting surplus or deficit of capacity. **Figure 4** shows the equivalent capacity change in tonnes (for reference purpose only). Since ACAR24 the following changes are evident:

- A reduction in Newlands-GAPE System DNC of approximately 5% due to a range of factors including a reduction in consists. A reduction in median payload sees capacity in tonnes fall by 7%. DNC remains materially lower than Committed Capacity, although is still broadly sufficient to meet forecast demand (see **Section 6.8**);
- A slight increase in Goonyella System capacity due to a range of factors. Capacity remains aligned with demand noting the inclusion of ~300 train paths of New Access contracted by AN following ACAR24. An offsetting reduction in median payload sees capacity in tonnes reduce marginally;
- A 4% reduction in Blackwater System DNC primarily due to track maintenance impacts and a reduction in the number of consists utilised, however the system is still able to meet contracted demand; and
- Capacity in the Moura System shows a modest increase of approximately 3%.

Figure 3 - Deliverable Network Capacity by coal system – FY26 – train paths

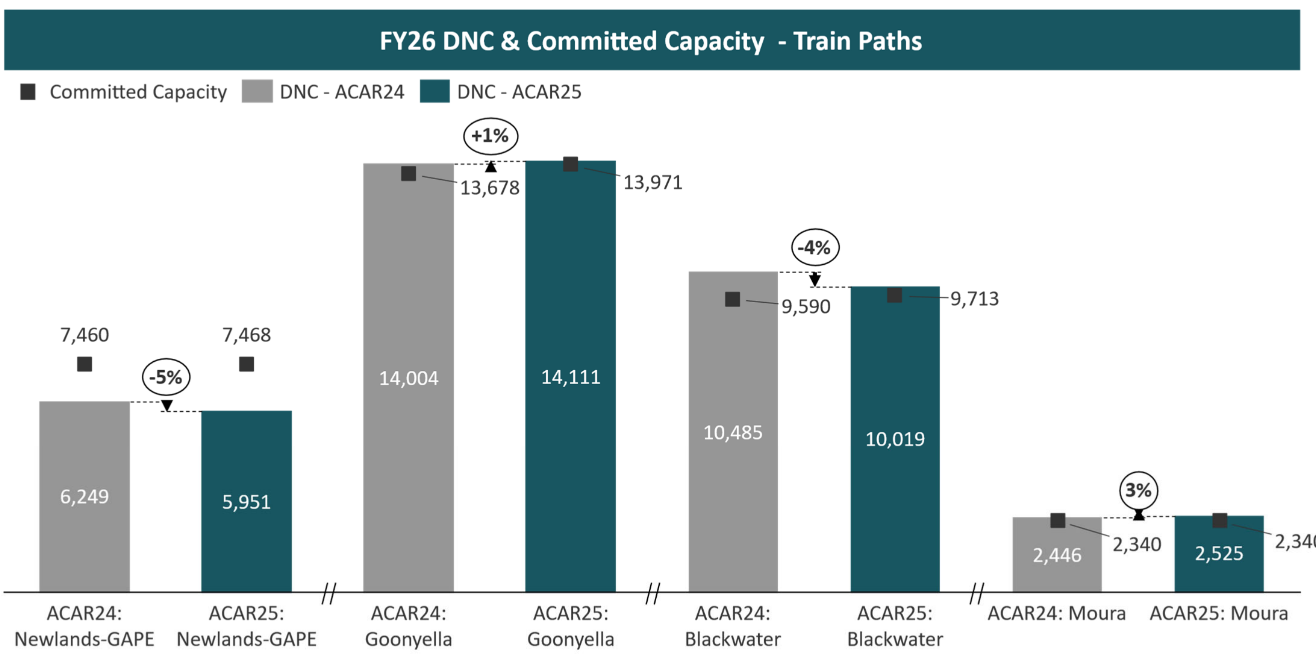
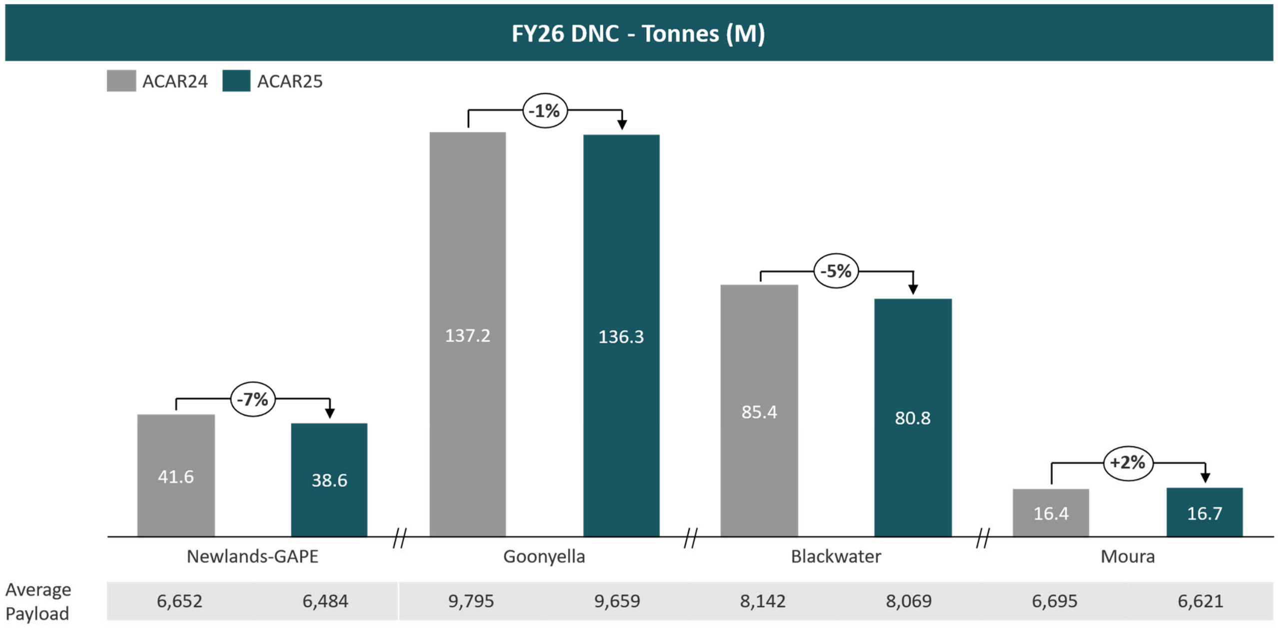


Figure 4 - Deliverable Network Capacity by coal system – FY26 – tonnes



More detailed information on the results for each coal system can be found in **Sections 6 - 9** of this report.

3. ACAR Changes - CQCN-wide

A range of changes have been made to both the inputs to the capacity assessment, and the way the results have been presented in ACAR25. The changes that affect all systems are outlined below, while system-specific factors are outlined in the relevant section within **Sections 6 - 9** of the report.

3.1 ACAR Report Changes

The ACAR report continues to present an indicative view of changes in capacity since the prior year and the absolute impact of key input variables within each system, however a number of enhancements have been made to the reporting of capacity assessment outcomes.

3.1.1 DNC Results – Measurement Methodology

The CQCN Model is a stochastic Model and includes a mixture of fixed inputs (e.g. planned maintenance events) and random probability distributions (e.g. unplanned maintenance events). This means that each run of the simulation will result in different outcomes as the values for key inputs are randomly chosen throughout the course of the simulation run. To address this natural variability the Model is run 100 times, from which 50 results are selected to provide a representative range of outcomes from which to determine DNC.

In prior years, the annual DNC has been determined based on the median of the 50 annual throughput outcomes. UT5 requires that DNC be calculated on a monthly basis and prior ACARs have included monthly capacity breakdowns each representing the median of a month’s results. Unfortunately this has created some confusion as the sum of the median of 12 months’ capacity does not necessarily equal the median of the annual results.

To avoid such confusion moving forward, the IE has aligned monthly and annual DNC results by calculating the annual DNC as the sum of the medians of each of the 12 constituent months. This change has increased DNC results slightly, with increases in each system under 0.5%.

3.1.2 Forecast Demand, Current Operations Scenario

In response to feedback from stakeholders, ACAR25 sees the introduction of a new modelling scenario. A number of stakeholders expressed that it was difficult to reconcile the results of ACAR capacity modelling with the current “real world” situation.

To allow stakeholders to more easily relate the Model outcomes to their recent experience of the network, the IE has introduced a new scenario for ACAR25. Titled “Forecast demand, current operations”, this scenario modifies certain ACAR-compliant input assumptions to more closely reflect the recent performance of the network. Key variable changes in this scenario include:

- Origin-destination demand based on the annual forecast information used by AN in the calculation of FY26 tariffs (which incorporates producer forecasts where available) rather than full contractual capacity. To reflect seasonality these annual demand amounts have been distributed across months using historical throughput patterns;
- Increased inloader shutdowns based on current maintenance plans (ACAR includes only that terminal maintenance operators have advised they would undertake in a full-demand environment);
- Current above rail consist numbers;
- Recent (CY2025) cancellation rates without ACAR adjustments for mine-related and force majeure cancellations.

The monthly results of this scenario are included in each system’s section of the ACAR, illustrating in which months it is likely to be most difficult to service forecast demand. It is important to stress that this scenario is provided for information only and does not alter the ACAR determination of DNC.

3.1.3 Reconciliation to Maximum Capacity

Stakeholders will be aware that there remains in some parts of the CQCN debate regarding the capacity of a given coal system. Much of the potential for disparity can be a result of differing approaches to the definition of capacity and the resulting factors that are included or excluded in modelling capacity.

To try to give stakeholders an understanding of the contributing factors, the IE has prepared a reconciliation between DNC and a track network unconstrained by non-track infrastructure capacity (TLOs, terminal inloaders and rail depots/yards capacities are increased well beyond current levels), maintenance activities and day of operations losses or above-rail consist numbers. This provides an illustration of the constraint factors in a system and the maximum (theoretical) capacity of that system. In the maximum capacity case, system capacity is restricted only by the track infrastructure and its ability to support the flow of trains.

3.2 Transitional Arrangements

ACAR25 includes no new Transitional Arrangements (TA), given that no further TAs have been approved since ACAR24. Most notably, DNC assumes no use is made of the Collinsville passing loop in the Newlands-GAPE System.

3.3 Demand

To assess the maximum capacity of the rail infrastructure it is important to ensure that sufficient demand is available to fully utilise the available track infrastructure. To achieve this, demand within the Model is increased beyond 100% of committed capacity (applied evenly across all origin-destination combinations in a system) until the limit of throughput is achieved.

In ACAR25, train demand has been limited to 120% of contract for each monthly period. This reverses the change made in ACAR24 to increase demand to 140% of contract (except for Newlands-GAPE which remained at 120%). While this change assists equity in achievement across origin-destination combination, the primary reason was to avoid an assumption that coal mines can support significant swings in monthly production to accommodate infrastructure limitations. Instead, mines are expected only to present coal for railing on a reasonably even monthly basis.

3.4 Consist Allocation and Above Rail Productivity

Just as it is important to ensure that sufficient demand is available to fully utilise the available track infrastructure, sufficient above rail assets must also be available. A decision must therefore be made as to the appropriate number of above-rail consists for each system. This requires some careful consideration as additional consists increase network congestion which can reduce throughout.

To determine the most appropriate number of consists for each of the CQCN systems, the IE uses a Model with the final input settings, which is then run using a range of different consist scenarios. For this analysis, a uniform shared third-party above rail fleet is used (dedicated above rail providers continue to serve their dedicated mines).

The results of these Model runs are reviewed to examine both the throughput benefits of additional consists and the negative impact on above rail productivity. For ACAR25, above rail productivity has been measured by examining the transit time in a system (akin to cycle time but excluding loading and unloading time which are unrelated to track infrastructure). The trade-off between throughput and above rail productivity is a subjective assessment and the IE has applied judgement to determine the appropriate allocation of consists for each system. Further detail is provided for each system in **Sections 6-9**, but most systems' DNC determination for ACAR25 included a reduction in consists and a corresponding reduction in capacity and expected cycle times.

Once the optimal number of consists in a system has been determined (as described above), the resulting number of consists are allocated to the appropriate operators. This allocation typically results in a small reduction in throughput compared with a fully flexible above rail fleet. This impact is outlined in the sensitivity scenarios for each system.

3.5 Asset-related Model Inputs

The SOP outlines the assumptions used in calculating DNC. A number of CQCN-wide modifications were made to the ACAR25 Model, which affect the DNC results for this year.

3.5.1 Removal of loaded pathing

Prior modelling reflected clockface departure for empty trains from the yard and for loaded trains at the main line in each of the CQCN systems. This was aligned with the pathing profile for each system previously advised by AN:

Table 1: ACAR24 Model Clockface Departures

	Empty departure		Loaded departure	
System	**Location**	**Frequency**	**Location**	**Frequency**
Newlands-GAPE	Pring	45 mins	Collinsville	45 mins
Goonyella	Jilalan	20 mins	Coppabella	20 mins
Blackwater	Callemondah, Kabra	15 mins	Bluff, Rocklands	20 mins
Moura	Callemondah	90 mins	Dumgree	90 mins

These Model settings required empty and loaded trains to be held until the next clockface departure time, even if the track ahead was clear. A review of train departure data showed strong compliance with the clockface departure regime for empty trains in all systems, but little or no alignment for loaded trains (either in the train schedule or actual train operations). As a result, the IE has removed this clockface departure constraint for loaded trains (but retained it for empty trains).

3.5.2 Moving Maintenance

In response to feedback from stakeholders following ACAR24, CNCC has examined whether aspects of AN's maintenance regime had not been captured in previous ACAR capacity modelling. This relates to the capacity impacts of maintenance that were not captured as track possessions (previously the basis of all maintenance included in ACAR modelling), but rather as "moving maintenance" activities involving a maintenance train moving slowly through the track network and thereby restricting the passage of coal trains.

This process has identified two activities that fit this criterion which had been omitted from previous ACAR processes:

- Mainline rail grinding – this excludes turnout grinding (already captured as maintenance possessions) but includes all track grinding whether on mainline or branch lines; and
- Preventative track resurfacing – this excludes turnout resurfacing and reactive mainline resurfacing (both already captured as maintenance possessions).

For ACAR25, the IE has focused on the inclusion of mainline rail grinding, as it is more easily identifiable and appears to have the greater capacity impact. Further work will be required to include resurfacing in future ACAR processes.

For mainline rail grinding, the IE was unable to obtain details of AN's planned FY26 grinding scope which AN considers to be commercially confidential. As a result, CNCC reviewed historical traffic movement data and MRSB reporting for the rail grinder to develop a notional grinding program consistent with ACAR volume levels. This grinding work was then included in the Model to reflect the anticipated moving maintenance activities. The impact on capacity from rail grinding was modest – less than 50 train paths in most systems.

3.5.3 Hi-Rail Activities (Infrastructure Inspections)

Infrastructure inspections are carried out using a hi-rail vehicle, a car fitted with wheels that allow the car to travel on the rail infrastructure. These inspections are scheduled, and the Model makes the section of the track unavailable for coal services during the time when the hi-rail vehicle is present.

For ACAR25, CNCC has re-examined the inclusion of hi-rail movements within the Model. A review of non-coal traffic data identified four separate traffic types representing various types of hi-rail movements (distinguished mainly by the speed of the vehicle). Almost 80% of the recorded movements were attributed to regularly scheduled inspections – the so-called “road patrol” movements in which AN track inspectors conduct a visual inspection while driving on the track at 30 km/h. Based on this, CNCC decided to focus the ACAR25 infrastructure inspection analysis on this specific type of hi-rail movement. The remaining 20% of movements may be examined in future ACAR processes.

The analysis confirmed that road patrol movements follow a rigid schedule which could be replicated in the ACAR Model. The observable patterns have been identified and implemented as a series of short track possessions in the Model to reflect their impact on track capacity. The capacity impact of the inclusion of infrastructure inspections in this way was modest, ranging from 40 train paths (Newlands-GAPE) to 110 train paths (Goonyella).

3.5.4 Track Maintenance

In addition to moving maintenance and infrastructure inspections discussed above, ACAR25 capacity modelling includes three other categories of track maintenance activities (including renewals), outlined below.

Integrated Closures

Integrated closures include Full System Shuts (FSS) and branch line shuts which form part of AN’s Maintenance Renewals and Strategy Budget (MRSB) scope. Information regarding these planned possessions and the IE utilises this information as an input into the Model with few, if any, modifications. These integrated closure activities are also used in the consideration of other types of maintenance to ensure no “double counting” of maintenance possessions and their capacity impacts occurs. There has been no change to the approach for this maintenance in ACAR25.

Major Maintenance

In addition to the integrated closures described above, AN’s MRSB scope includes further maintenance tasks that can be accommodated within less extensive possessions, including single-line closures within duplicated track sections. Like integrated closures, CNCC utilises this information as an input into the Model with few, if any, modifications. There has been no change to the approach for this maintenance in ACAR25.

Minor Maintenance

While AN scopes tasks and schedules possessions for major maintenance well in advance, other smaller-scale maintenance tasks are required across the network. This includes planned maintenance activities as well as “breakdown” maintenance tasks.

As in ACAR24, the IE has examined historical information to understand the extent of minor maintenance which has affected capacity in order to estimate the extent of minor maintenance expected in future.

Minor maintenance possession hours in CY2024 increased in all systems over CY2023, further extending the long-term trend observed since 2020 (see **Table 2** below).

Table 2: Historical Minor Maintenance Hours

	CY2020	CY2021	CY2022	CY2023	CY2024
ACAR24	4,866	6,936	5,381	7,214	
ACAR25		7,047	5,472	7,197	8,838

Note minor differences in CY2021-23 are due to updated data classification

After reducing historical possession hours for overlap with integrated closures and scaling to full-demand levels, minor maintenance possessions input in the ACAR25 Model for FY26 increased in all systems except Newlands-GAPE.

AN has indicated to the IE that they are increasing the proportion of minor maintenance possessions that occur simultaneously with other major or minor maintenance, thereby reducing the capacity impact of that maintenance.

The IE has not yet been able to properly assess the data to identify such a trend and thus has yet to explicitly incorporate such an effect in the ACAR modelling but this existing methodology will reflect such impacts evident in CY2025. Further analysis and representation of this effect represents a planned improvement opportunity for CNCC.

3.5.5 TLO Maintenance

Given that planned maintenance at TLOs can vary from year to year at each TLO, the IE has generally used a notional TLO maintenance schedule that is broadly aligned with long-term historical records of TLO maintenance. These records have consistently shown around 4,000 possession hours of maintenance outside integrated closures across the CQCN.

ACAR25 continues this approach except where more specific information was available. This year, several stakeholders provided forecast FY26 TLO maintenance schedules to AN or provided information directly to CNCC regarding their TLO maintenance profile. From this information CNCC identified a small number of longer shutdowns (greater than 48 hours) outside network closures. Such occasional long shutdowns were also evident at other TLOs in the historical data; however these longer shutdowns tend to be more sporadic with few occurring on a regular annual basis. Many of these long shutdowns were also aligned to individual inloader shutdowns (as distinct from network shutdowns), which would be expected to reduce their impact on DNC.

For ACAR25 modelling purposes CNCC has used a program of regular periodic maintenance at each TLO akin to the approach utilised from ICAR to ACAR23, with amendments reflecting scheduled FY26 maintenance forecasts already provided to AN or communicated to CNCC directly. Longer shutdowns have only been included where they could be identified as occurring on a regular, predicable basis. The inclusion of these shutdowns increased total ACAR25 TLO maintenance hours to ~4,800 hours. As in previous ACAR reports, TLO maintenance was not a significant factor in determining DNC, with the impacts ranging from 1 train path (Newlands-GAPE) to 40 train paths (Goonyella).

3.5.6 TLO Loading Rates and Payloads

As in previous years, the IE has examined loading records from AN and above rail operators to assess the payload and loading times for each TLO in the CQCN.

This year, examination of the resulting expected loading times was compared with current AN scheduled loading times. In this data a number of outliers were evident where it appeared that trains were unlikely to have sufficient time to fully load. After discussion with AN, the IE has proposed to AN that scheduled loading times be revised to align with at least the P70 point on the distribution of loading times as outlined in the SOP (i.e. the time necessary to allow 70% of trains to fully load) in order to increase payload in the CQCN. AN is currently in consultation with stakeholders as to how such a change could be effected.

3.5.7 Delays

The IE has instituted a change to the way AN's delay data is analysed to provide inputs into the Model.

Delays in the CQCN network can affect a single train service (primary delay) and possibly other services (secondary delays). The longer a primary delay, the greater the potential impact on other services. The CQCN Model requires information regarding the expected frequency and duration of faults within the network that lead to delays – this means the Model only requires information regarding primary delays, as the Model then determines any subsequent impact on other services based on Model conditions at the time.

AN's data systems record as delays any deviation from the standard Sectional Run Time (SRT) for each portion of a train's journey. This represents a subtle difference from the concept of delays in the CQCN Model.

For ACAR25, a new approach was instituted to analyse AN data to classify delay events and their duration. This approach first excludes delay types that the Model generates itself (e.g. time waiting for an inloader to become available) and then identifies and separates primary delay events within the data and calculates the rate and duration of primary delays for each system. A small number of delay events recorded by AN as having lasted longer than 24 hours were capped at 24 hours to avoid the potential for such events to cause Model failure.

AN's delay recording system does not require allocation of delays of up to 3 mins per section – these delays can be attributed to the generic code described as "Automatic System Variance". The IE has excluded this code (and therefore the majority of delays of less than 3 minutes) from the delay analysis as it was not possible to determine the nature of these delays. The IE notes however that the use of the automatic system variance delay code appears to correlate highly with the presence of Temporary Speed Restrictions (TSR) in a section due to AN's data collection approach. The IE acknowledges that the exclusion of these delays might impact the cycle times of trains in the Model but does not consider that this will materially impact the assessment of capacity.

The result of this change in approach is the Model will experience fewer delay events but that events have a longer average duration and each event will therefore have a greater capacity than in prior ACAR assessments. The overall impact of the change in delay methodology was a slight increase in capacity in each of the systems.

4. Stakeholder Engagement and Feedback

Following development and distribution of the draft SOP, which represents the key inputs into the Model, CNCC engaged face-to-face with all service providers (AN, above rail operators and terminal owners and operators) and sought feedback from producers in relation to their assets. Key topics raised included:

SOP Consultation Feedback	IE Action
Clarification of TLO loading time assumptions and the basis for CNCC's identification of significant light loading at a range of TLOs and a desire to understand the impact of light loading across the systems	Light loading impact included in sensitivity chart for each system
Clarifications regarding producers' TLO maintenance assumptions for several TLOs	Adjustments to some TLO maintenance profiles where available from producers
Potential mismatches between allocation of above rail operators to TLOs based on historical data rather than current above rail contractual arrangements	No action – potential to seek contractual information from operators for ACAR26
Clarification regarding above rail maintenance activities – frequency, duration and location (network track infrastructure vs private infrastructure)	Amendments to Model assumptions as advised
CNCC's approach to selection of the appropriate number of above rail consists for a system and the associated trade-off between throughput and cycle-time	Trade-off considerations shown for each system. Additional information on cycle-time segment breakdown (see **Sections 6-9**)
Feedback regarding significant Blackwater System delays in H1 2024, now resolved.	Adjustment to Blackwater delay data sample to exclude H1, revised Blackwater delay assessment.
Impact of RG Tanna inloader/route restrictions on delays in the Blackwater System	Clarification that delays in accessing specific inloaders are excluded from network-related delay inputs in the Model
Questions regarding input assumptions and impacts of rail grinding and hi-rail inspection activities	Clarification regarding IE notional grinding program aligned with high-level metrics from AN data. Clarification regarding observable hi-rail inspection movements and pathing/capacity impact.

5. Future Opportunities

As part of each ACAR process, the CNCC team identify opportunities for improvement of the modelling and DNC outcomes to most closely represent the operation of the network. Not all opportunities can be addressed immediately but will become part of an improvement program. From the ACAR25 process, the following opportunities have been identified by CNCC:

- Adjustment of demand methodology to emphasize satisfaction of each origin-destination's contractual demand before servicing additional capacity demand
- Refinement of unloading activities to capture historical pre and post-load delays specific to each inloader (to replace current standard assumption of 7 and 8 minute respectively);
- Re-examination of the modelled train movements between Callemondah yard to RG Tanna and return to ensure that the Model accurately captures AN's management of this critical section of track infrastructure;
- Refinement of the Model's generation of secondary delays on a system-by-system basis;
- Potential refinement of Model delay inputs on a sub-system level (e.g. mainline and branch-lines separately);
- Review of sectional run times:
  - Potential IE "first principles" determination of SRTs (rather than use of standard AN SRTs);
  - Examination of section level delays captured as "Automatic System Variance".
- Review and monitor minor maintenance activity long-term trends after taking overlapping activities into account:
  - Review historical maintenance records to identify maintenance task overlaps;
  - Identify most significant event – other simultaneous events fall within "shadow" of this event.
- Use AN track condition assessment data to better anticipate TSRs;
- Re-examination of even railings assumptions for terminals other than DBCT;
- Extension of Pring yard cancellation-related occupancy to Jilalan and Callemondah.

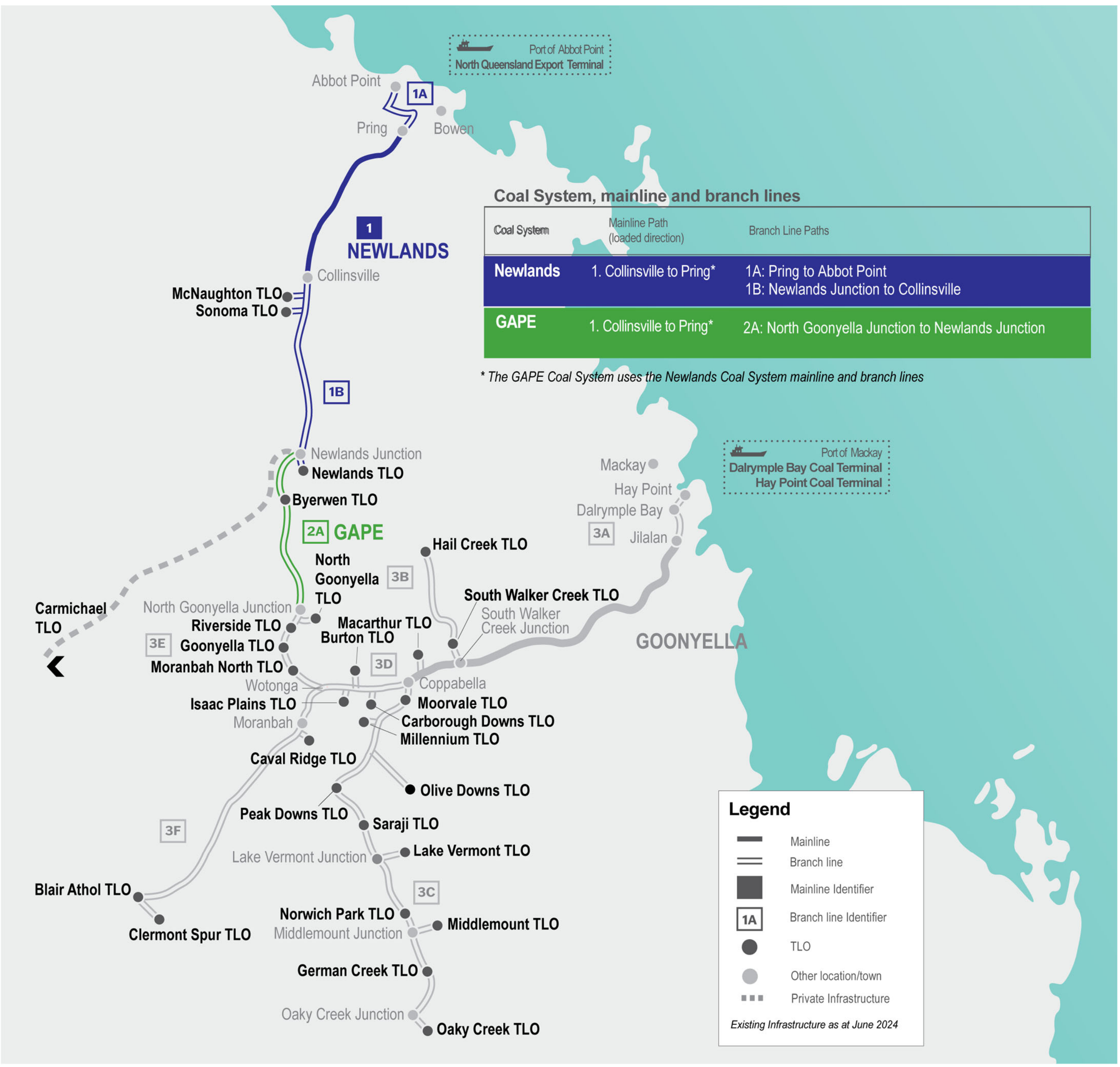
6. Newlands and GAPE Systems

6.1 Overview of Newlands and GAPE systems

The Newlands System refers to the rail infrastructure comprising the rail corridor from the terminal at NQXT to Newlands mine (now decommissioned). The Newlands System rail infrastructure is also used by GAPE System traffic (traffic utilising the rail corridor from North Goonyella Junction to Newlands Junction and generally originating in the Goonyella System) and for traffic from Bravus' Carmichael Private Network. A map of the Newlands and GAPE systems is provided in **Figure 5.**

The close integration of the GAPE and Newlands systems mean that these systems are effectively modelled as one system for the purposes of capacity assessment. As a result, ACAR25 reporting for these systems is provided primarily on a combined basis. For the purposes of strict compliance with UT5, which requires reporting on each system, separate Newlands and GAPE capacity information is included in **APPENDIX A: Newlands System Information** and **APPENDIX B: GAPE System Information**.

Figure 5 - Newlands and GAPE systems



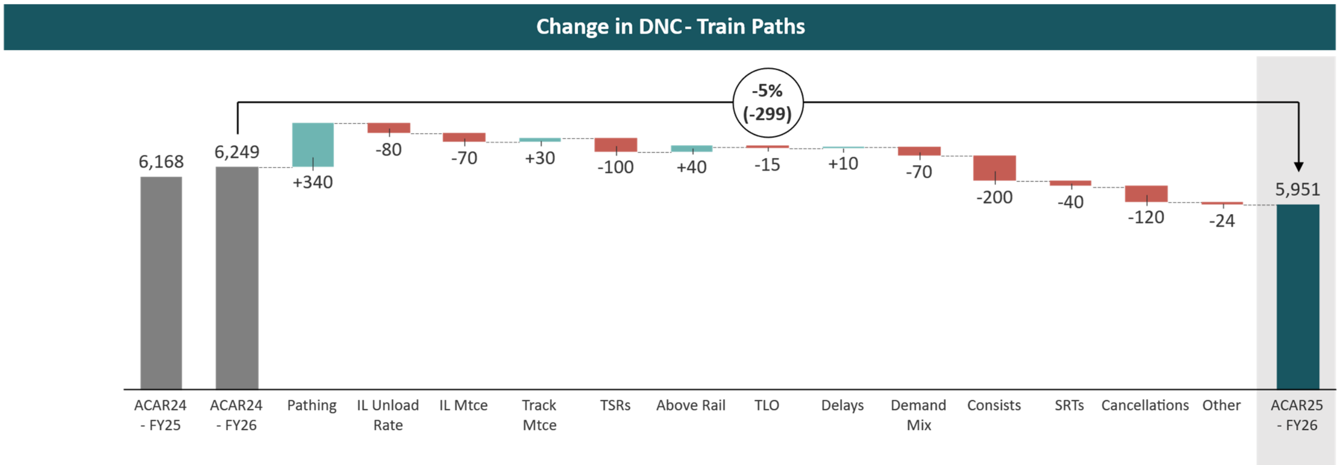
6.2 Deliverable Network Capacity

6.2.1 Changes since ACAR24

The combined Newlands-GAPE System DNC has seen a reduction in FY26 capacity of ~300 trains since ACAR24. In addition, a ~2.5% reduction in median payload has seen capacity in tonnage terms decreasing to 38.6Mt.

Figure 6 provides an indicative breakdown of the changes from ACAR24 to ACAR25 for FY26, the most significant of which are discussed in more detail in the remainder of this section.

Figure 6 – Indicative Newlands and GAPE changes from ACAR24 to ACAR25 – FY26



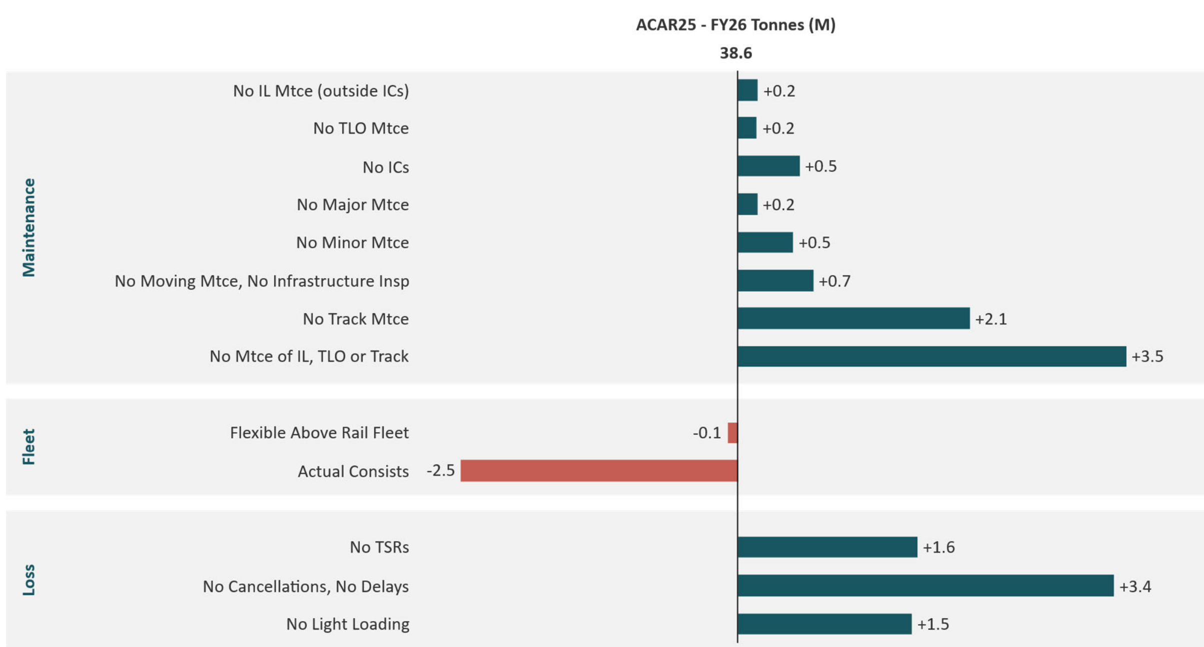
	ACAR24 - FY25	ACAR24 - FY26	Pathing	IL Unload Rate	IL Mtce	Track Mtce	TSRs	Above Rail	TLO	Delays	Demand Mix	Consists	SRTs	Cancellations	Other	ACAR25 - FY26
Tonnes (M) *	**40.0**	**40.5**	2.2	-0.5	-0.5	0.2	-0.6	0.3	-0.1	0.1	-0.5	-1.3	-0.3	-0.8	-0.2	**38.6**

* Tonnes are calculated using the ACAR25 FY26 average payload.

6.2.2 Key Input Sensitivities

An assessment has also been performed of the impact on Newlands-GAPE System DNC of changes to key operating parameters, these are represented in tonnes in **Figure 7** below.

Figure 7 - Newlands and GAPE sensitivity impact to DNC for key operating parameters – FY26



6.3 Modelling Changes

6.3.1 Removal of loaded pathing

As discussed in **Section 3.5.1** the IE has removed the loaded train clockface departure constraint. Removing this has a significant impact in the Newlands-GAPE System (+340 trains) due to the long (45 min) clockface departure interval compared with other systems.

6.3.2 Terminal Unload Rate

Examination of NQXT-provided unloading data showed an increase in instances of long unloading events compared with previous years. This resulted in a reduction in network capacity of approximately 80 trains (~0.5Mt).

6.3.3 Terminal and Track Maintenance

Terminal Maintenance

NQXT-provided maintenance plans also show a minor increase in short duration shutdowns. These minor shutdowns are not aligned with network integrated closures and result in a reduction in network capacity of approximately 70 train paths (0.5Mt).

In aggregate, inloader maintenance outside network shuts reduce Newlands-GAPE System DNC by approximately 0.2Mt.

Track maintenance

There is no change to AN's integrated closure plans which continue to see two major closures of 108 and 60 hours, however the IE has classified AN's two planned 24 hour "maintenance windows" in November and April as integrated closures resulting in a total of 216 hours of full system closures.

Despite this increase in planned closures, ACAR25 sees improvements in capacity associated with major and minor maintenance activities, both of which require fewer possession hours than ACAR24. The introduction of rail grinding, and the revision of the approach to hi-rail infrastructure inspection activities saw a minor offsetting reduction in capacity. The net impact of track maintenance activities is an increase in capacity of 30 train paths (0.2Mt) compared with ACAR24.

In aggregate, track maintenance activities reduce capacity by approximately 315 train paths (2.1Mt).

6.3.4 Temporary Speed Restrictions

Analysis of TSRs in the Newlands-GAPE System (CY2022-24) showed an increase compared with ACAR24. This was assessed as reducing capacity by 100 train paths (~0.6Mt). In aggregate, TSRs in Newlands-GAPE reduce capacity by approximately 1.6Mt.

6.3.5 Delays and Cancellations

Changes to the delay methodology has increased capacity in the system very slightly (+10 trains). Cancellations in the Newlands-GAPE System increased slightly over ACAR24, while the introduction of cancellation-related delays in the Pring yard has been assessed as reducing capacity by approximately 90 train paths (~0.5Mt).

Collectively, delays and cancellations in Newlands-GAPE reduce capacity by approximately 510 trains (3.4Mt).

6.3.6 Committed Capacity and Demand Presentation

There have been no material changes in committed capacity for FY26 to FY29 since ACAR24. There have been no further adjustments relating to non-renewal of GAPE capacity expiring in FY28 and ACAR25 continues to assume the renewal of expiring capacity where that capacity carries renewal rights, as required by UT5.

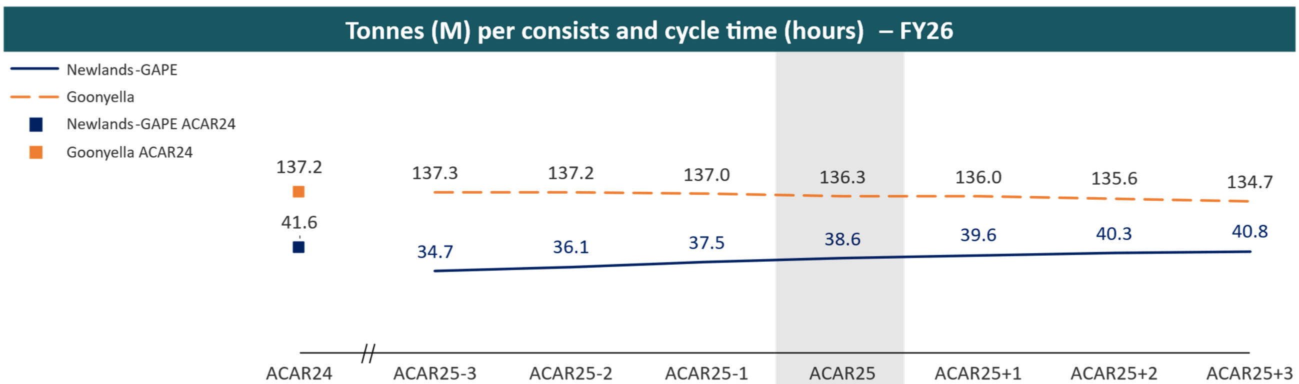
Newlands-GAPE capacity was reduced by 70 trains (0.5Mt) when updated contractual information for the CQCN was included. There was no direct change to Newlands-GAPE contracts and the IE attributes the change to the flow-on impact of the increase of approximately 300 train paths of new access in the Goonyella System.

6.4 Consist Numbers and Cycle Times

Consistent with previous years' assessments, the IE has optimised consist numbers within ACAR25 to ensure that above rail capacity is not a constraint on DNC. For ACAR25, consists have been reduced by 2 to a total of 18.

This change has reduced capacity by 200 train paths and is the largest single factor reducing Newlands capacity compared with ACAR24 FY25, but the change also contributed to a reduction in cycle time 18.3 and 28.4 hours (Newlands and GAPE respectively) to 14.0 and 25.9 hours respectively.

Figure 8 - Newlands-GAPE Consist sensitivity



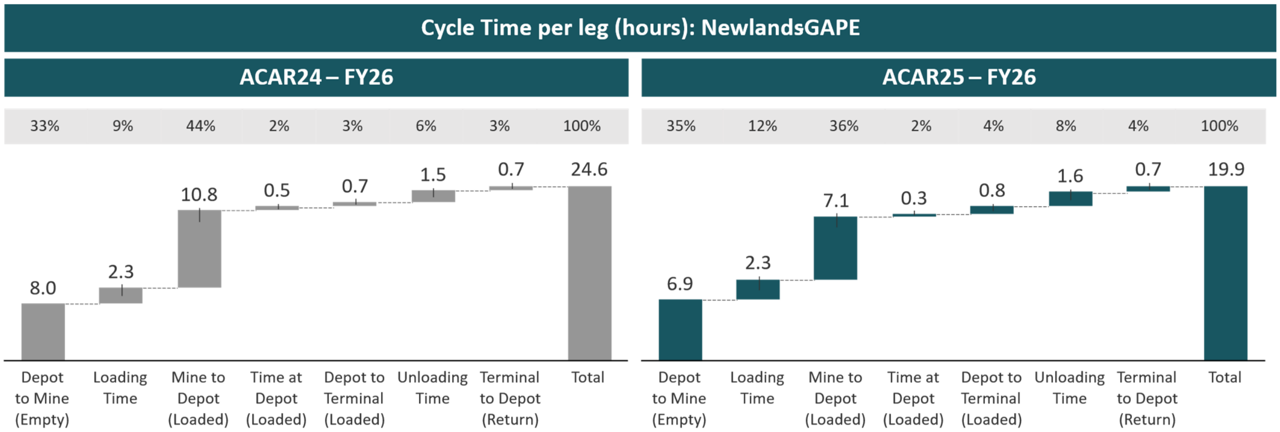
Newlands-GAPE Consists:	20	15	16	17	18	19	20	21
Newlands Cycle time:	17.7	12.7	13.1	13.6	14.0	14.6	15.2	15.8
GAPE Cycle time:	28.3	23.8	24.5	25.2	25.9	26.8	27.6	28.6
Newlands-GAPE Cycle time:	24.6	17.9	18.9	19.4	19.9	20.4	21.1	22.0

Table 3 - Newlands-GAPE Cycle Time

Cycle Time (Hours)	FY25 (ACAR24)	FY26 (ACAR24)	FY26 (ACAR25)	FY26 Change
Newlands	18.3	17.7	14.0	-21%
GAPE	28.4	28.3	25.9	-9%
Newlands-GAPE	25.2	24.6	19.9	-19%

As shown in **Figure 9** below, the reduction in cycle time is driven predominantly by the depot to mine (empty) and mine to depot (loaded) legs, illustrating the effect of a reduction in consists from ACAR24.

Figure 9 - Newlands-GAPE Cycle Time per leg



As discussed in SOP 2025, above rail operators are allocated to mines based on CY2024 railings. The IE has undertaken a sensitivity of the impact of above rail allocation, by allowing all third-party operators to operate to all mines. In the Newlands-GAPE System, there was no change to DNC as a result of allowing Aurizon Operations and Pacific National to both service all Newlands-GAPE mines (except the Carmichael mine).

6.5 DNC and Available Capacity/Existing Capacity Deficit (ECD)

The FY26 DNC of 5,951 train paths (a reduction of 299 from the ACAR24 FY25 DNC) with committed capacity of 7,468 train paths leaves the Newlands-GAPE System with an **existing capacity deficit** of 1,518 train paths in FY26 – equivalent to 9.8Mt at median expected payload. The reduction in DNC means that at present, an ECD continues through to FY30, pending any further reduction in committed capacity by that time.

Capacity outcomes for all years of the ACAR period is outlined below in **Figure 10** in Train Paths and **Figure 11** in tonnes.

Figure 10 - Newlands and GAPE summary for FY26 to FY30 (Train Paths)

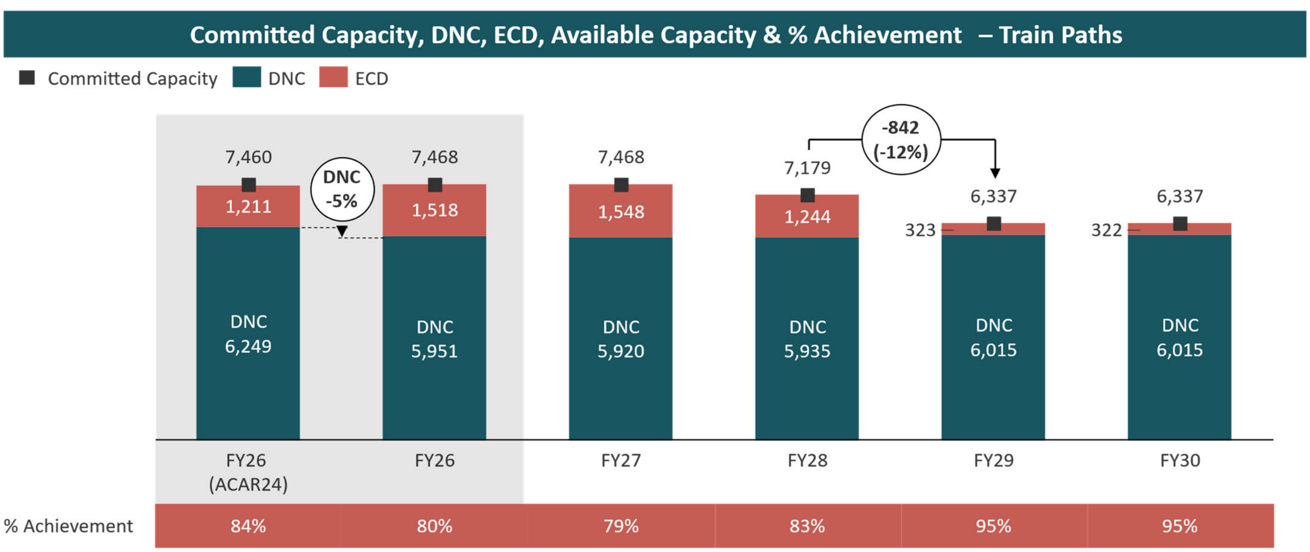
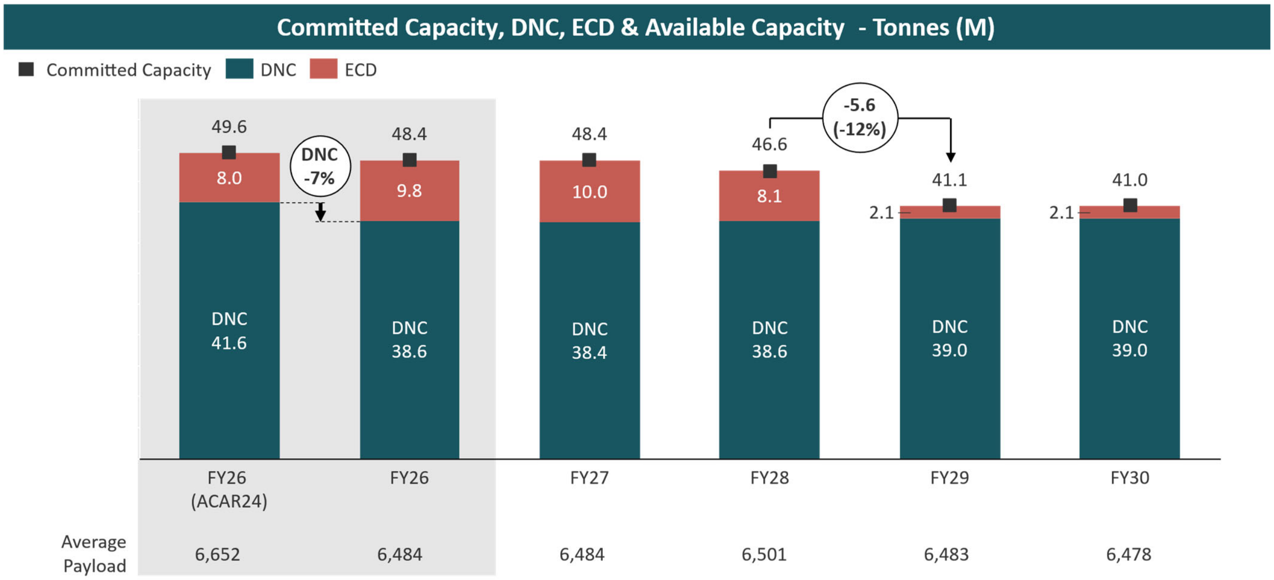


Figure 11 - Newlands and GAPE summary for FY26 to FY30 (tonnes)



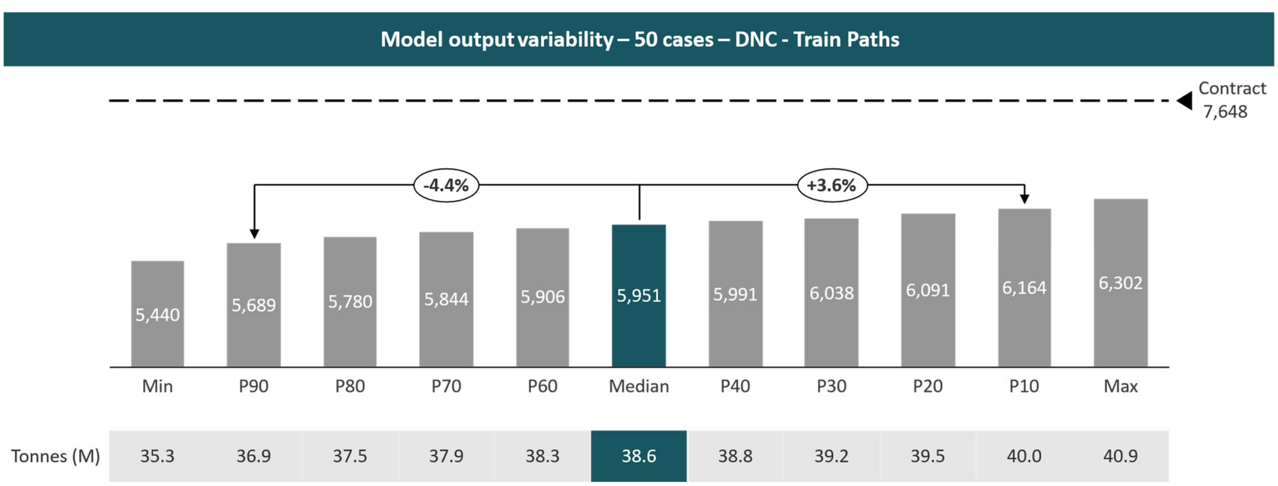
The DNC calculated separately for the Newlands and GAPE systems by month for the five-year assessment period is shown in **APPENDIX A: Newlands System Information** and **APPENDIX B: GAPE System Information.**

6.6 Model Variability

The ACAR25 Newlands-GAPE System DNC for FY26 of 5,951 train paths represents the median of 50 Model simulation runs. The P90 to P10 range of the DNC was from 5,689 to 6,164 train paths (an 8% range) as shown in **Figure 12** below**.** None of the Model runs achieved committed capacity for FY26.

It should be noted that the P10-P90 DNC variation metric has changed in magnitude due to the change to reporting DNC as the sum of monthly median's as discussed in **Section 3.1.1**. If measured on the previous annual median basis, variation remained at ~2%.

Figure 12 - Newlands-GAPE FY26 DNC – Model output variability

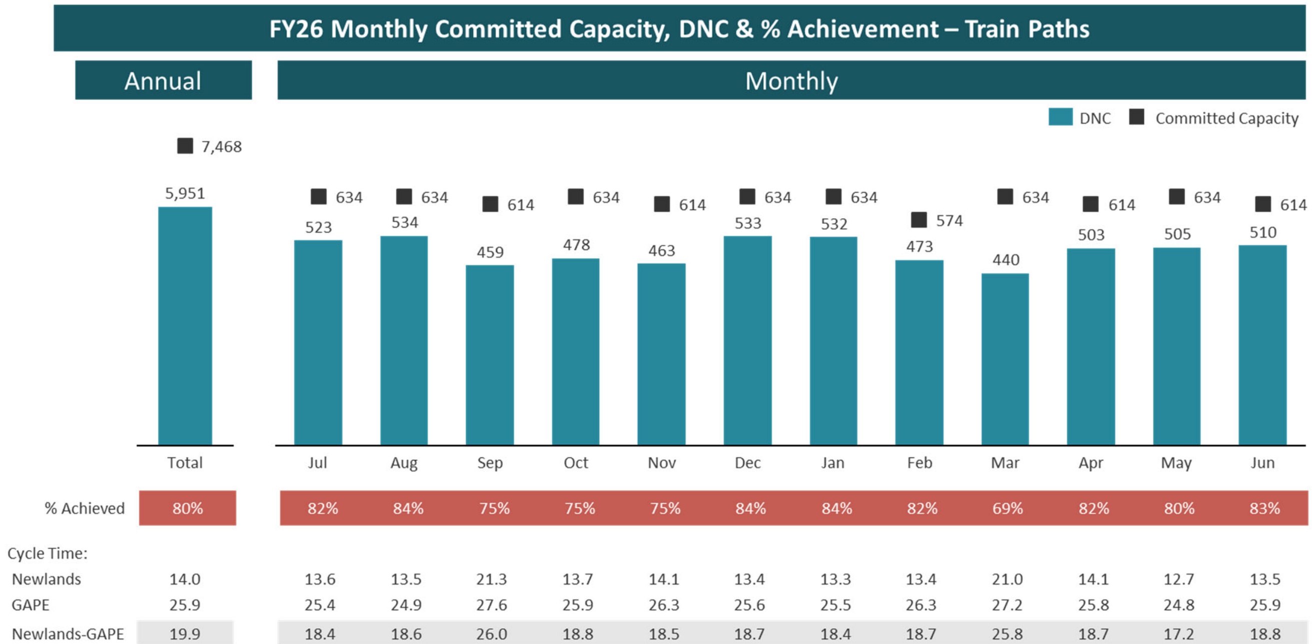


6.7 Monthly Capacity Variability

Although DNC is most frequently discussed in annual terms, the IE is required to determine each system's monthly capacity. FY26 monthly capacity in the Newlands-GAPE System is moderately stable, ranging from ~440 to 534 train paths per month with the most constrained months of March and September reflecting the scheduled system closures, as shown in **Figure 13** below.

Monthly capacity for the full five-year period of the ACAR Model is shown in **APPENDIX A: Newlands System Information** and **APPENDIX B: GAPE System Information**.

Figure 13 – Newlands-GAPE FY26 Monthly Capacity

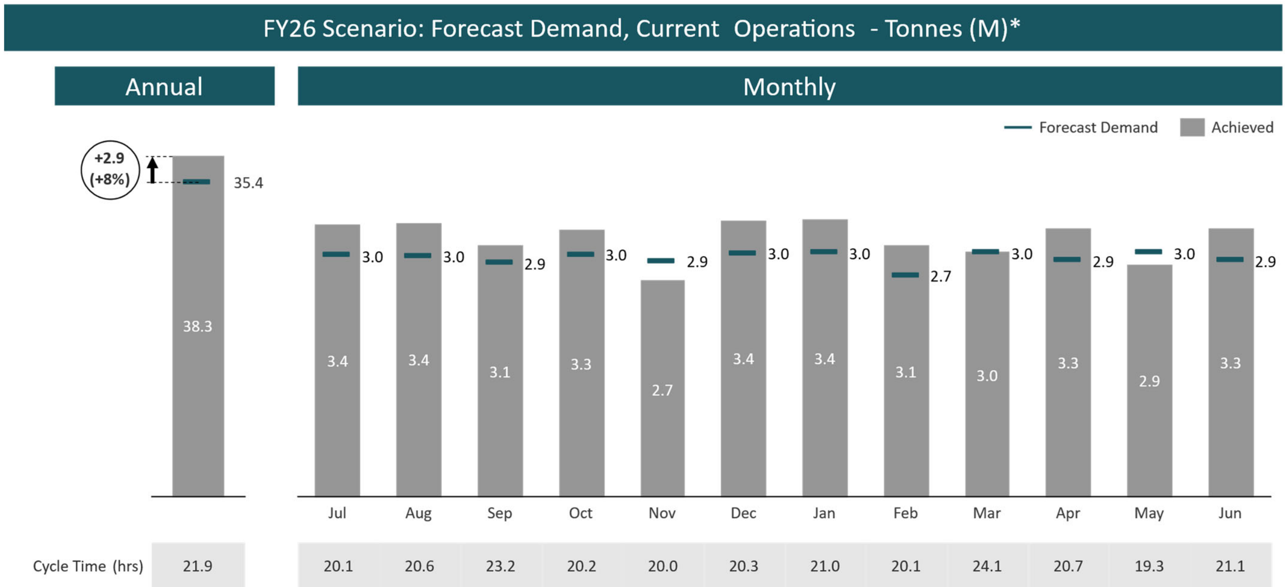


6.8 Current Demand, Current Operations Scenario

As discussed in **Section 3.1.2** For ACAR25, the IE has also examined a scenario for the Newlands-GAPE System that more closely reflects current levels of demand and current operations (consist numbers, inloader shutdowns and cancellations) in the system.

The results of this scenario, shown below in **Figure 14**, suggest that current capacity is sufficient to meet forecast demand in all months except November and May, although demand and capacity is closely matched in March. Expected cycle times appear reasonably stable between 20 and 21 hours, but September and March are expected to be much higher, reflecting the planned closures in those months.

Figure 14 – Newlands-GAPE System FY26 Scenario



* Tonnes are calculated using the ACAR25 FY26 average system payload

6.9 System Constraints

6.9.1 Mainline and Branch line DNC

The IE is required to determine DNC for each system's mainline and branch lines. In determining system DNC, the IE increases demand for each origin-destination pair in a system simultaneously until the maximum throughput is reached. The DNC, committed capacity and ECD values, where applicable, per mainline and branch line for Newlands-GAPE are outlined below in **Table 4** (in both train paths and tonnes).

Table 4 - Newlands and GAPE values per Mainline and Branch line for FY26 to FY30

System	Mainline / Branch Line		Committed Capacity					DNC					ECD				
			FY26	FY27	FY28	FY29	FY30	FY26	FY27	FY28	FY29	FY30	FY26	FY27	FY28	FY29	FY30
Train Paths																	
Newlands-GAPE	1	M.L. - Collinsville to Pring	7,468	7,468	7,179	6,337	6,337	5,949	5,923	5,932	6,013	6,014	1,519	1,545	1,247	325	323
	1A	B.L. - Pring to Abbot Point	7,468	7,468	7,179	6,337	6,337	5,949	5,923	5,932	6,013	6,014	1,519	1,545	1,247	325	323
	1B	B.L. - Newlands Mine to Collinsville	7,468	7,468	7,179	6,337	6,337	5,949	5,923	5,932	6,013	6,014	1,519	1,545	1,247	325	323
GAPE	2A	B.L. - North Goonyella Junction to Newlands Junction	4,345	4,345	4,047	3,214	3,214	3,299	3,275	3,195	2,973	2,977	1,047	1,071	852	242	238
Tonnes (M)																	
Newlands-GAPE	1	M.L. - Collinsville to Pring	48.4	48.4	46.7	41.1	41.1	38.6	38.4	38.6	39.0	39.0	9.8	10.0	8.1	2.1	2.1
	1A	B.L. - Pring to Abbot Point	48.4	48.4	46.7	41.1	41.1	38.6	38.4	38.6	39.0	39.0	9.8	10.0	8.1	2.1	2.1
	1B	B.L. - Newlands Mine to Collinsville	48.4	48.4	46.7	41.1	41.1	38.6	38.4	38.6	39.0	39.0	9.8	10.0	8.1	2.1	2.1
GAPE	2A	B.L. - North Goonyella Junction to Newlands Junction	27.9	27.9	26.1	20.6	20.6	21.1	21.0	20.6	19.0	19.0	6.7	6.9	5.5	1.5	1.5

6.9.2 Branch line Capacity and System Constraints

The allocation of system DNC to branch lines shown in **Section 6.9.1** above does not necessarily demonstrate the full potential capacity of each branch line in the Newlands-GAPE System. In order to test the capacity limits of different sections of the Newlands-GAPE System, the IE has undertaken a series of Model sensitivities. This involves increasing capacity in various sections of the system to reach their practical limit.

As in ACAR24, the current constraint continues to appear to be in branch line 1B, based on longest headway - currently Almoola to Birralee (noting that this section straddles the mainline and branch 1B), where maximum capacity is aligned with DNC. Addressing the apparent constraint in this section has been the focus of the current TAs study work.

The analysis continues to indicate that there is additional capacity in branch 2A (serving GAPE traffic) and that this branch line has sufficient capacity to satisfy all its current committed capacity. The IE considers there is likely to be capacity beyond the values specified in **Table 5,** however accurately assessing this would require significant changes to a range of Newlands System operating parameters - an exercise the IE has not undertaken.

Table 5 - Branch line sensitivity per month

Branch Line Capacity in excess of Committed Capacity- FY26													
Line	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Total**
1A B.L. - Pring to Abbot Point	-60	-50	-100	-100	-95	-50	-50	-55	-150	-60	-75	-55	**-900**
1 M.L. - Collinsville to Pring	-60	-50	-100	-100	-95	-50	-50	-55	-150	-60	-75	-55	**-900**
1B B.L. - Newlands Junction to Collinsville	-60	-50	-100	-100	-95	-50	-50	-55	-150	-60	-75	-55	**-900**
2A B.L. - North Goonyella Junction to Newlands Junction	+70	+85	-15	-20	+40	+70	+60	+60	-75	+50	+70	+80	**+475**

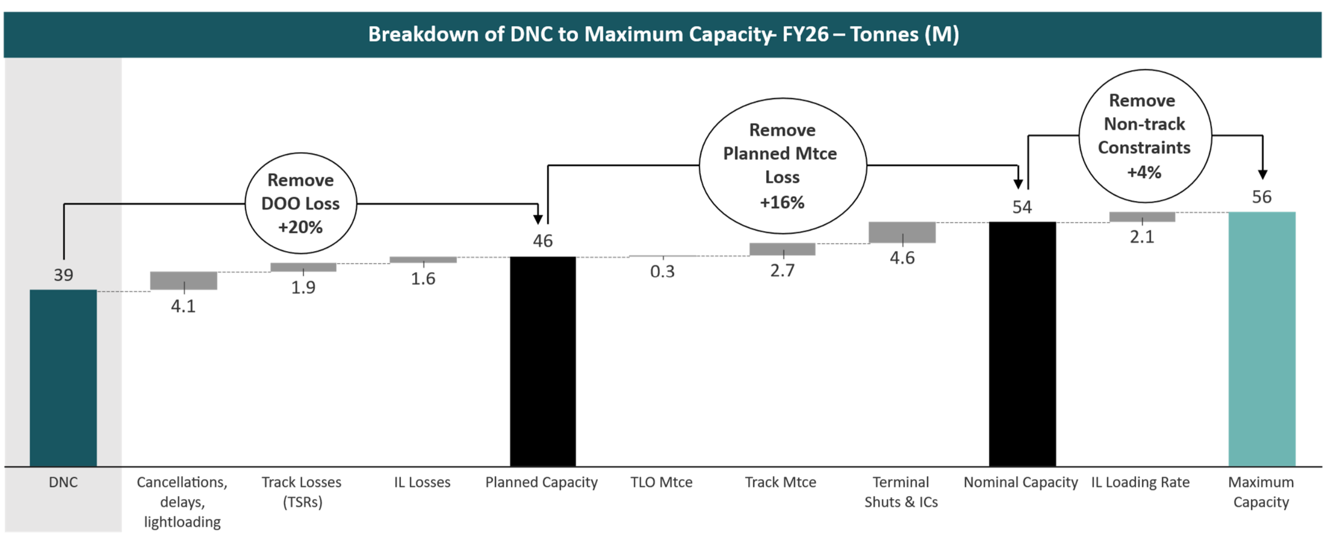
6.9.3 Reconciliation to Maximum Capacity

For ACAR25, the IE has prepared a comparison between DNC and theoretical, unconstrained capacity in the Newlands-GAPE System. **Figure 15** illustrates how the various operational and maintenance activities affect capacity and the DNC.

With DNC of 39Mt as the starting point, removing unplanned day of operations issues, including inloader delays, track TSRs and cancellations and delays increases capacity by ~7Mt. Removing planned maintenance activities (inloader, track and TLO) further increases capacity to approximately 54Mt.

The IE has further unconstrained the TLOs, inloaders and yards by increasing loading and unloading rates to 200% of ACAR levels and increasing the number of roads in the yard, which yields capacity of approximately 56Mt. This is the maximum (albeit theoretical) capacity of the track infrastructure.

Figure 15 – Newlands-GAPE System Maximum Capacity



6.10 Capacity Risks and Opportunities

Newlands-GAPE stands alone in ACAR25 as the only system with an ECD in FY26, and indeed for the entirety of the five-year period.

This means that the UT5 obligation for AN to address the capacity deficit remains. Options to increase capacity – both via modest capital investment and operating changes – remain under assessment. The situation is complicated however, by the potential for further reduction in GAPE demand in FY28 and beyond. None of those possibilities are explicitly addressed in the ACAR report but provide the potential for significant change in the Newlands-GAPE capacity landscape in the short-medium term. The IE will continue to work with AN and other stakeholders in the consideration of capacity improvement opportunities and indeed operating improvements in general, in conjunction with the Newlands Supply Chain Forum. Once implemented, any changes can be included in future capacity assessments as their benefits are demonstrated and quantified.

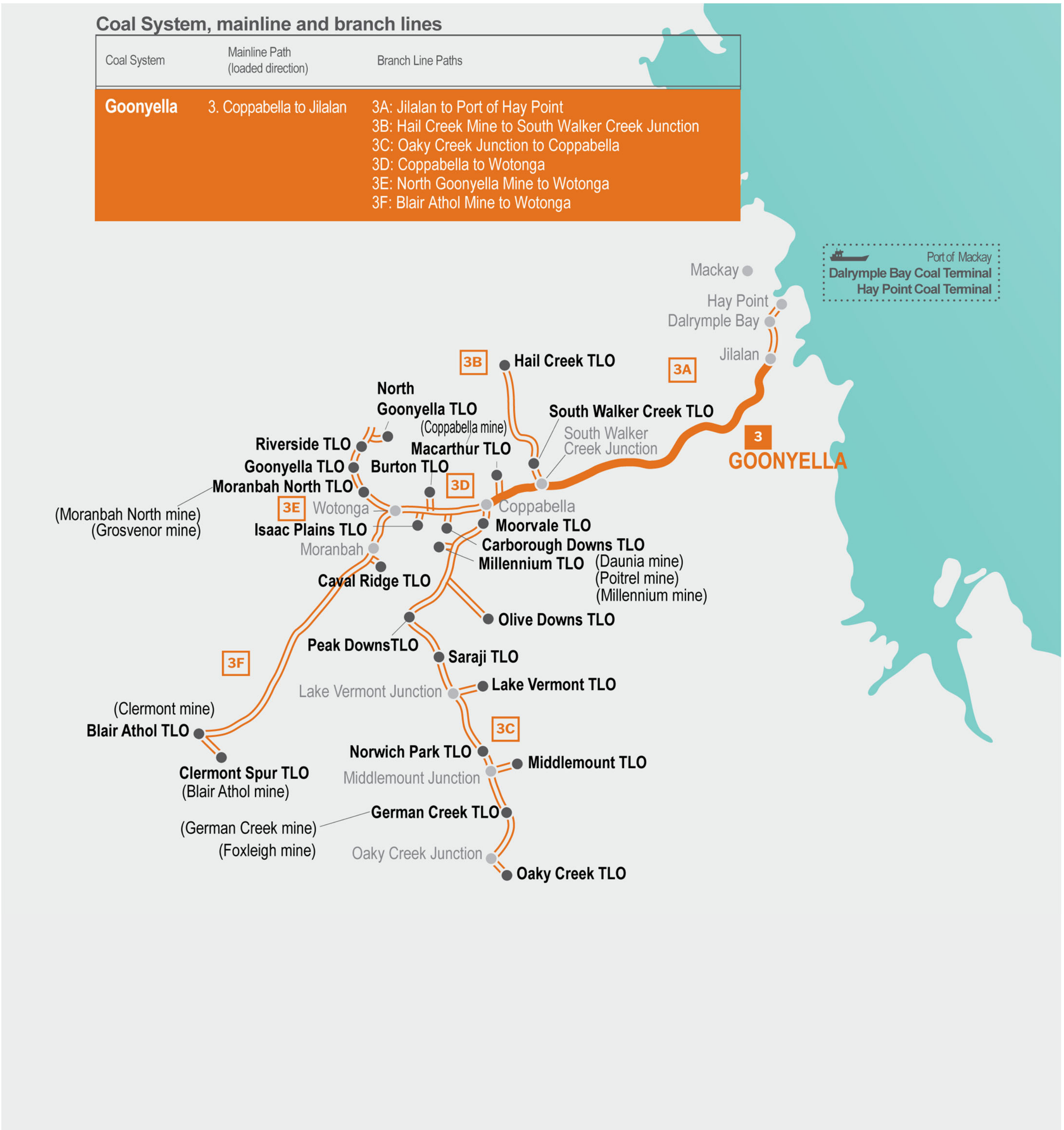
More immediately, the IE is aware of the planned NQXT ship loader major shutdown later in 2025. This has not been included in ACAR modelling as it lies outside the scope of DNC assessment. It does have the potential to reduce train loading capacity at the terminal, but this will depend on the stockpile situation at the time. This therefore represents a downside risk to FY26 capacity.

7. Goonyella System

7.1 Overview of System

Figure 16 shows the system and each mainline and branch line that makes up the Goonyella System, incorporating the rail infrastructure from the terminals at the Port of Hay Point (i.e. Hay Point Services Coal Terminal and Dalrymple Bay Coal Terminal) to the Hail Creek mine, the Clermont mine, the North Goonyella mine and the junction with the Oaky Creek branch line and all spur lines connecting coal mine loading facilities to those corridors.

Figure 16 - Goonyella System



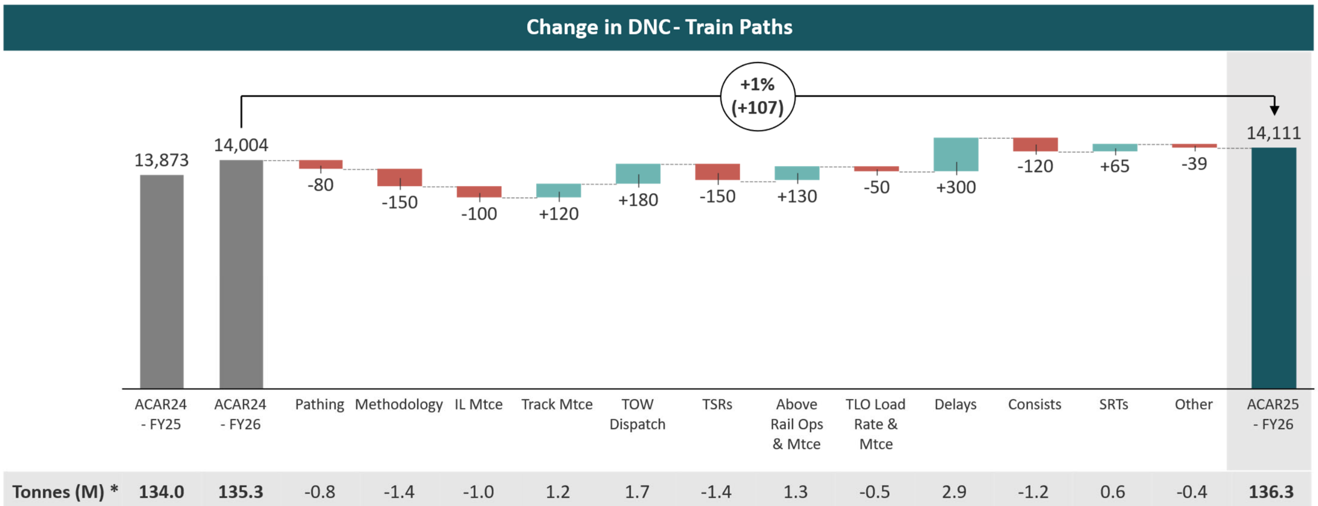
7.2 Deliverable Network Capacity

7.2.1 Changes since ACAR24

The FY26 Goonyella System DNC has seen an increase of ~110 train paths (+1%) compared with ACAR24 to 14,111 train paths. A slight reduction in median payload offsets this increase and capacity in tonnage terms remains essentially flat at 136.3Mt.

Figure 17 below provides an overview of changes from ACAR24 to ACAR25 for FY26. This outlines a range of changes – both increases and reductions – with the most significant factors outlined in this section of the report.

Figure 17 – Indicative Goonyella changes from ACAR24 to ACAR25 – FY26

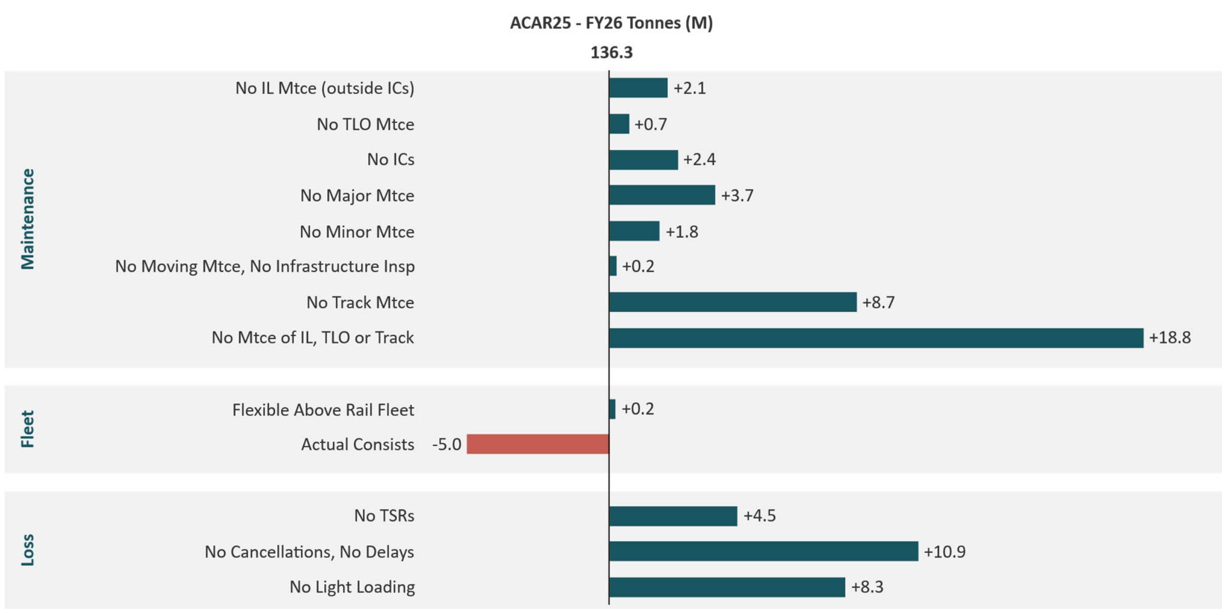


* Tonnes are calculated using the ACAR25 FY26 average payload.

7.2.2 Key Input Sensitivities

An assessment has also been performed of the impact on Goonyella System DNC of changes to key operating parameters, these are represented in tonnes in **Figure 18** below.

Figure 18 - Goonyella sensitivity impact to DNC of key operating parameters – FY26



7.3 Modelling Changes

7.3.1 Removal of loaded pathing

As discussed in **Section 3.5.1**, ACAR25 removes the prior Model assumption of clockface departures for loaded trains at Coppabella until the next 20 minute clockface time, even if the track ahead was vacant.

Given the relatively close spacing of Goonyella pathing, this change did not have a significant direct impact on the Goonyella System, but the significant uplift in Newlands-GAPE capacity (+340 trains) has an indirect impact on Goonyella, reducing capacity by ~80 trains.

7.3.2 Train Dispatch Methodology

Changes have been made to the factors that the Model considers in dispatching trains – particularly how track maintenance conditions alter train dispatch. This replaces some more coarse logic and input settings applied by the IE previously and sees a net reduction in capacity of ~150 trains.

7.3.3 Terminal and Track Maintenance

Terminal Maintenance

Planned maintenance information was updated based on advice from the terminal operators. This included an increase in overall maintenance shuts outside network integrated closures, reducing capacity by ~100 train paths (1.0Mt).

Taken in aggregate, terminal inloader maintenance outside system shuts reduce Goonyella System DNC by approximately 215 train paths (~2.1Mt).

Note also that based on a review of CY2024 data, there were no evident changes in the inloading rate performance or unplanned delay behaviour of the inloaders at DBCT or HPCT and no changes have been made to these operating parameters.

Track maintenance

Track maintenance inputs include integrated closures and major maintenance (per the FY26 MRSB), minor maintenance (the IE's estimate based on historical data) and (new in ACAR25) mainline rail grinding and routine scheduled hi-rail inspection activities.

Full system integrated closure possession hours in FY26 are largely unchanged from previous years, but branch line closure hours have reduced with the elimination of two Gregory branch closures. Other MRSB maintenance saw a minor reduction, while the impact of minor maintenance saw a more significant reduction in capacity impact.

Taken in aggregate, changes to track maintenance, including newly introduced items, saw Goonyella System capacity increase by 915 trains (8.7Mt).

7.3.4 Trains on Way

ACAR24 saw the introduction of a dispatch moderation tool that allowed the IE to optimise capacity in the Goonyella System by balancing the dispatch of trains between the DBCT and Hay Point terminals. This was, however, a static variable set for the entire year of the Model.

In ACAR25, this functionality has enhanced to allow variation in the train balance during specific periods (down to a daily level). This has allowed the IE to refine the train balance during periods of inloader shutdown. The Model now reduces train dispatches to Hay Point and increases trains destined for DBCT during a Hay Point shut and vice-versa, consistent with how users and AN would likely manage demand during such periods. This enhancement has increased Modelled FY26 Goonyella capacity by approximately 180 train paths (~1.7Mt).

7.3.5 Temporary Speed Restrictions

Analysis of TSRs in the Goonyella System (CY2022-24) showed an increase in TSRs compared with ACAR24. This was assessed as reducing capacity by 150 train paths (~1.4Mt). In aggregate, TSRs in Goonyella reduced capacity by approximately 4.5Mt.

7.3.6 Above-rail Operations and Maintenance

ACAR25 saw more detailed engagement with above rail operators regarding above rail maintenance activities, including frequency, duration and, in the case of Goonyella, refinement to which activities occurred on AN track vs private infrastructure. Along with updates to crew change locations these changes saw an increase of ~130 trains (~1.3Mt) in the Goonyella System.

7.3.7 Delays and Cancellations

The IE's assessment of cancellations in the Goonyella System in CY2024 that are used as inputs increased over CY2023 from 16% to 18%. Cancellations are not a major driver of capacity in the current Model, and therefore it has only has a small impact on capacity.

Changes to the delay methodology (as discussed in **Section 3.5.7**) have increased Goonyella System capacity quite substantially (+300 trains).

Despite these changes delays remain a substantial factor in Goonyella System capacity – removal of delays and cancellations from the Model sees capacity increase by approximately 1,140 trains (10.9Mt).

7.3.8 Committed Capacity and Demand Presentation

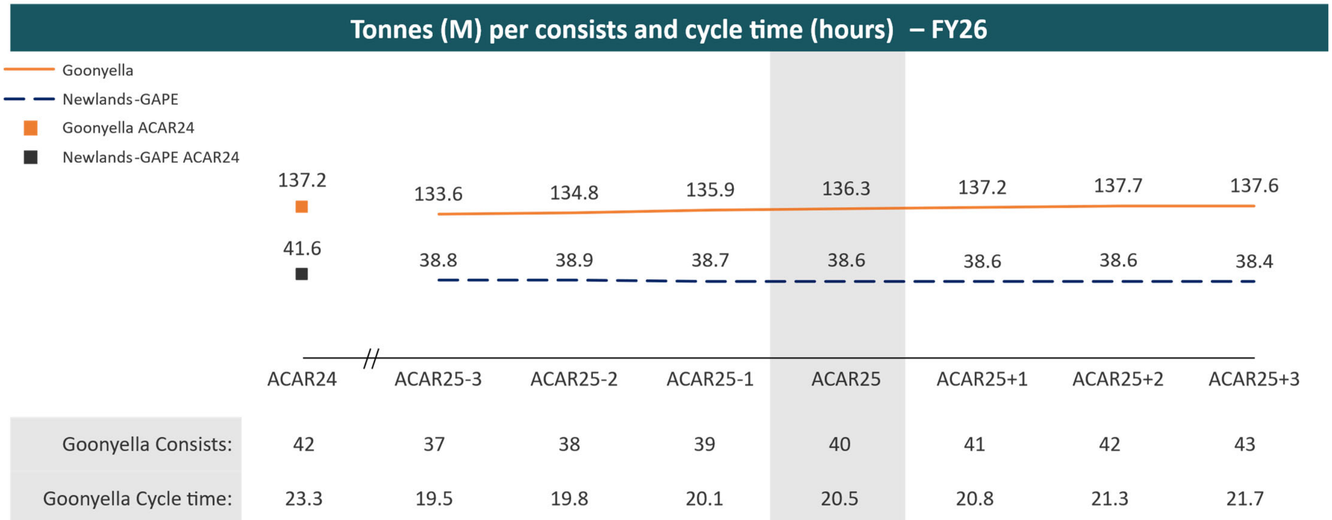
ACAR24 assessed that the Goonyella System had FY26 Available Capacity of 326 trains. As a result, AN offered additional contractual capacity to access seekers in the Goonyella access queue. Three access requests were assessed and approved by the IE and contracts for this capacity were executed in FY25. This process was the most significant factor in the increase in FY26 committed capacity over ACAR24 FY25 of 330 trains.

In preparing ACAR25, the IE has adjusted the method for presenting train demand to the Model. These changes relate to how monthly demand is spread within a month and was undertaken to reduce the effect where smaller mines appeared to be more susceptible to underachievement in constrained capacity months. There was no material impact to Goonyella System throughput resulting from this change.

7.4 Consist Numbers and Cycle Times

Consistent with previous years' assessments, the IE has optimised consist numbers within ACAR25 to ensure that above rail capacity is not a constraint on DNC by assessing both throughput and above-rail transit time. In this analysis, summarised in **Figure 19** below, increments of throughput and cycle time are not necessarily evenly distributed, so the IE has exercised judgement in interpretation. For ACAR25, Goonyella System consists have been set at 40, a reduction of 2 compared with ACAR24.

Figure 19 - Goonyella Consist sensitivity



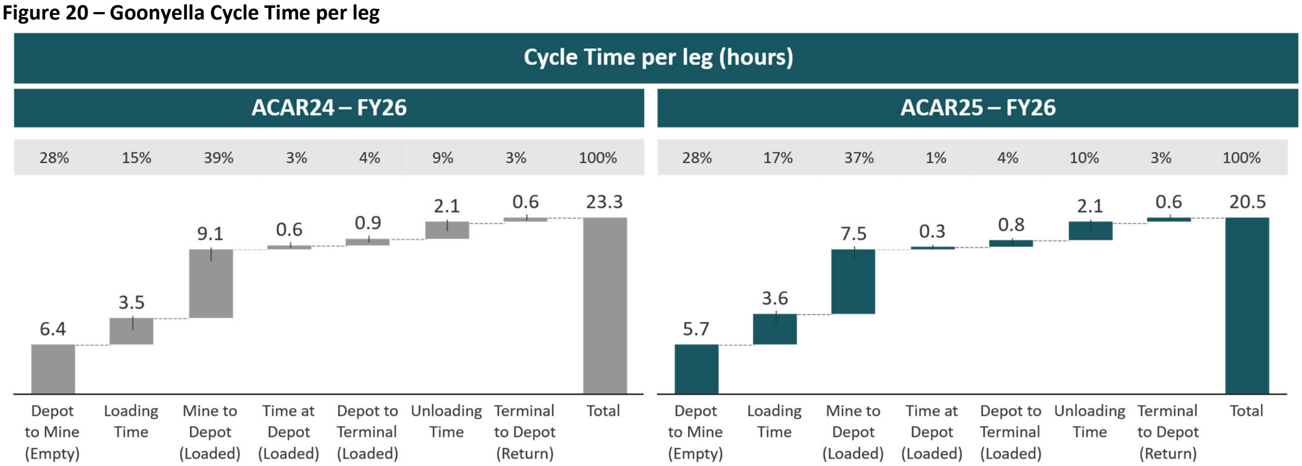
This change has reduced capacity by ~120 train paths, but is also a significant factor in the reduction in Modelled FY26 cycle time from 23.3 hours in ACAR24 to 20.5 hours in ACAR25 as outlined in **Table 6** below.

Table 6 - Goonyella Cycle Time

Cycle Time (Hours)	FY25 (ACAR24)	FY26 (ACAR24)	FY26 (ACAR25)	FY26 Change
Goonyella	23.3	23.3	20.5	-12%

As **Figure 20** below shows, the cycle time change includes a reduction of 1.6 hours mine to depot (loaded) and 0.7 hours depot to mine (empty) reflecting the reduced track congestion provided (in part) by the reduction in consists and delays.

Figure 20 – Goonyella Cycle Time per leg



Above-rail operators are allocated to mines based on CY2024 railings and in the Goonyella System, adjustments were made to distinguish diesel consists from electric consists to reflect the effect of serving non-electric load points (where applicable). Including this issue as well as the operator allocation, Goonyella System DNC increased by approximately 20 trains (~0.2Mt) when these constraints were removed, suggesting a modest impact within the DNC due to operator-specific fleet allocation – lower than the same scenario in ACAR24 (likely reflecting the broader allocation of multi-operator load points than in ACAR24).

7.5 DNC and Available Capacity/Existing Capacity Deficit

While Goonyella System FY26 committed capacity has increased by 293 train paths, an increase in DNC of 107 train paths over ACAR24 to 14,111 (136.3Mt) sees the system retain available capacity, albeit now reduced to 140 train paths (~1.3Mt). Some available capacity does appear to exist in each of the future years, but is just 29 train paths in FY27, suggesting little potential for further capacity contracting at this time.

Capacity outcomes for all years of the ACAR period are outlined below in **Figure 21** in train paths and **Figure 22** in tonnes.

Figure 21 - Goonyella summary for FY26 to FY30 (Train Paths)

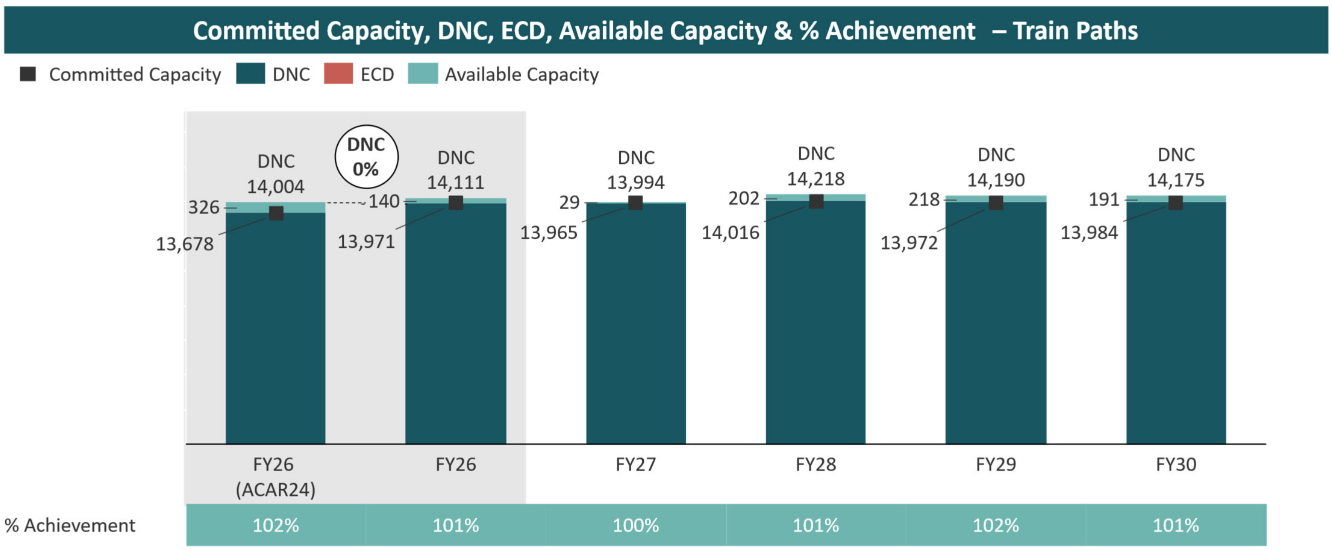
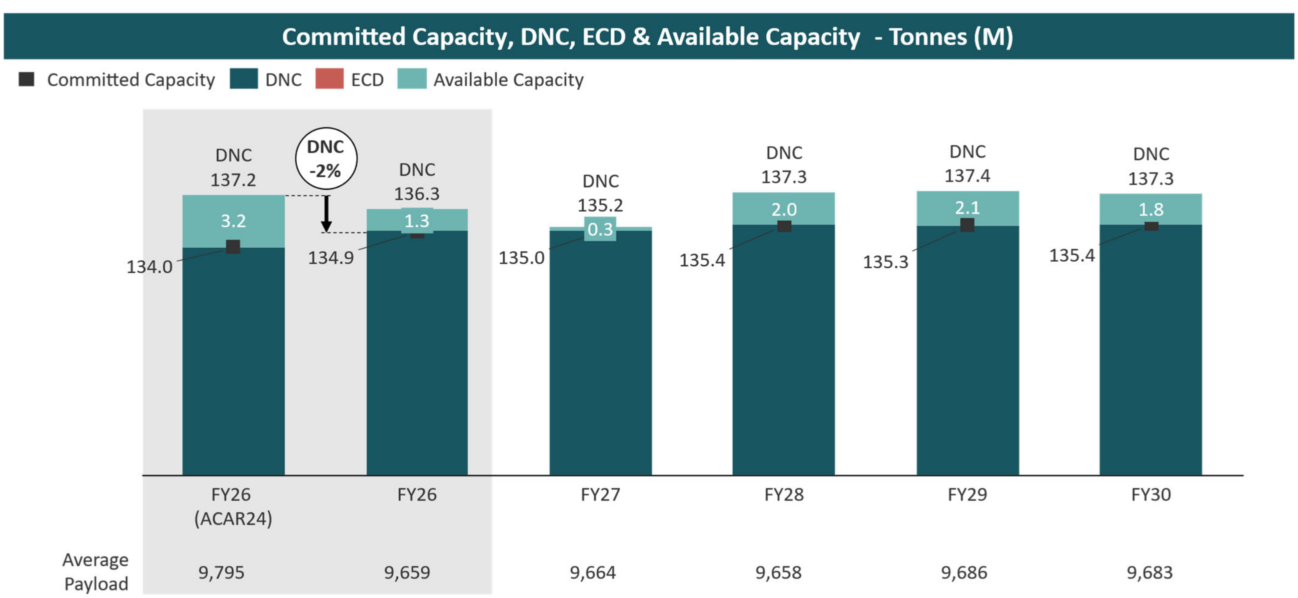


Figure 22 - Goonyella summary for FY26 to FY30 (tonnes)



The DNC calculated for the Goonyella System by month for the five-year assessment period is shown in **APPENDIX C: Goonyella System Information**.

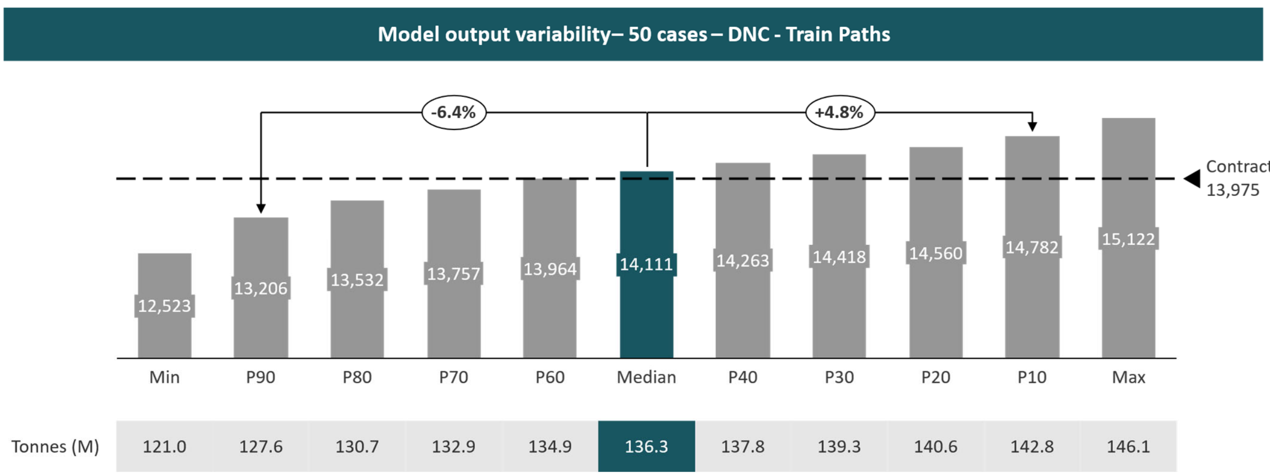
7.6 Model Variability

The ACAR25 Goonyella System DNC for FY26 of 14,111 train paths was determined from the median of 50 Model simulation runs. The P90 to P10 range of the DNC was from 13,206 to 14,782 train paths (an 11% range) as shown in **Figure 23**. Almost 40% of the Model runs did not achieve committed capacity for FY26.

It should be noted that the P10-P90 variation metric has changed in magnitude due to the change to reporting DNC as the sum of monthly median's as discussed in **Section 3.1.1**. If measured on the previous annual median basis, variation remained at ~2%.

It is also noteworthy that the available capacity of 140 train paths represents less than 10% of the variability indicated in these results.

Figure 23 - Goonyella FY26 DNC – Model output variability



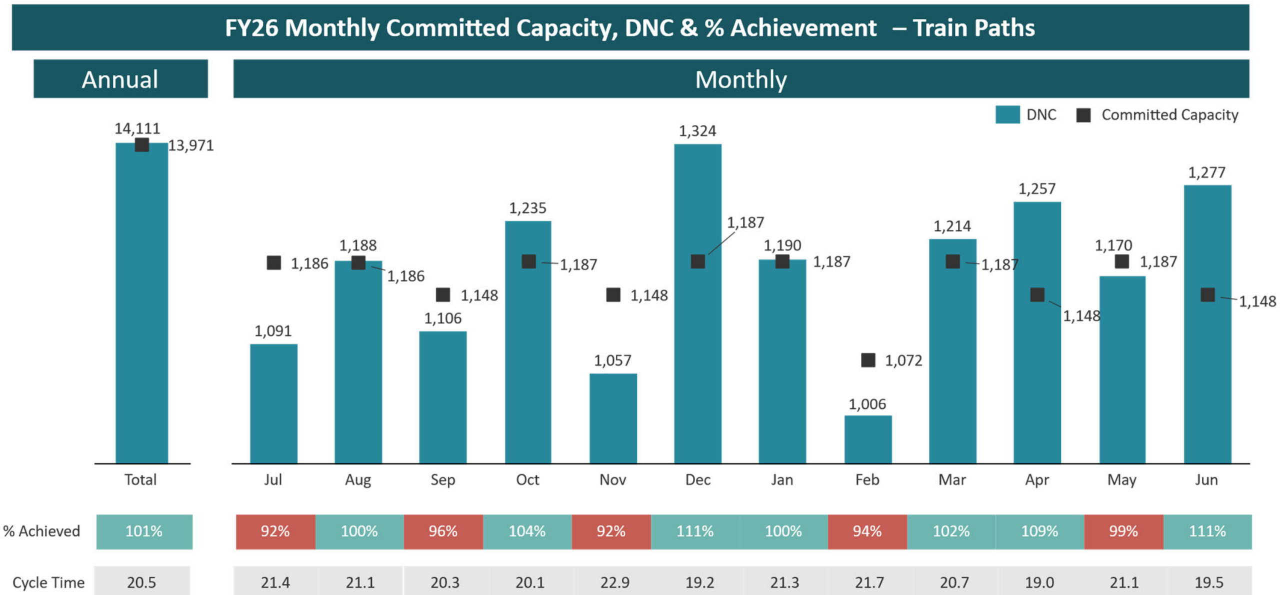
7.7 Monthly Capacity Variability

The IE is required to determine each system's capacity on a monthly basis. FY26 monthly capacity in the Goonyella System shows a reduction in variability compared with ACAR24. The dips in capacity in the first half of the year (associated with port and track maintenance) are less pronounced than ACAR24. February has the lowest absolute monthly capacity although November has slightly less average daily capacity.

When considered against committed capacity, outcomes range from 8% below committed capacity to 11% above committed capacity, as shown in **Figure 24** below. This 19% range is substantially lower than the corresponding 36% range shown in ACAR24 and the resulting standard deviation also reduces from 12% to 10% from the expected FY25 capacity in ACAR24. This suggests that capacity should be available on a more even basis than in FY25.

Monthly capacity for the full five-year period of the ACAR Model is shown in **APPENDIX C: Goonyella System Information** largely aligned to planned maintenance events.

Figure 24 – Goonyella System FY26 Monthly Capacity



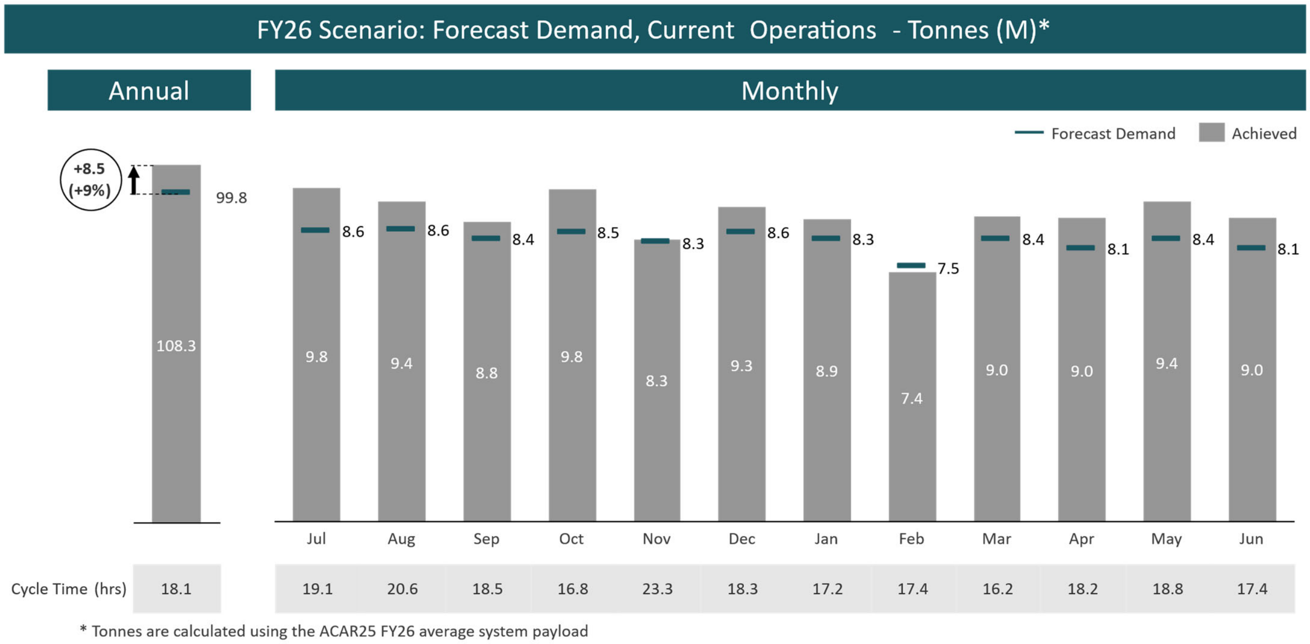
7.8 Current Demand, Current Operations Scenario

For ACAR25, the IE has also examined a scenario for the Goonyella System that more closely reflects current levels of demand and current operations in the system.

For this scenario, demand has been represented by the FY26 annual volume forecasts for each origin-destination prepared by AN for submission to the QCA, which uses producer forecasts where available. To reflect the seasonal demand patterns, the IE has distributed the annual volume across the months of FY26 following the throughput profile from CY2024. To service this demand, this scenario uses only the consists presently operating in the system and uses cancellation rates unaltered from AN's data.

The results of this scenario, shown below in **Figure 25**, suggest that current capacity is sufficient to meet forecast demand in all months except February, which is a shorter month and includes a 36 hour closure. Demand and capacity are closely matched in November, aligning with significant terminal maintenance and the 60-hour North Goonyella and Blair Athol branch line shuts. Expected cycle times appear reasonably stable between 17 and 20 hours, with November being a noticeable outlier at approximately 23 hours.

Figure 25 – Goonyella System FY26 Scenario



7.9 System Constraints

7.9.1 Mainline and Branch line DNC

The IE is required to determine DNC for each system's mainline and branch lines. In determining system DNC, the IE increases demand for each origin-destination pair in a system simultaneously until the maximum throughput is reached. The DNC, committed capacity and ECD values, where applicable, per mainline and branch line for Goonyella are outlined below in **Table 7** in train paths and tonnes.

Readers will note an apparent ECD in several branch lines. The IE considers this a result of the way the Model services demand, such that some unevenness in contractual achievement between mines (and therefore branch lines) has become evident. The IE does not consider that this represents a physical constraint on these branch lines (a conclusion informed in part by the analysis in **Section 7.9.2**).

Table 7 - Goonyella values per Mainline and Branch line for FY26 to FY30

System		Mainline / Branch Line	Committed Capacity					DNC					ECD				
			FY26	FY27	FY28	FY29	FY30	FY26	FY27	FY28	FY29	FY30	FY26	FY27	FY28	FY29	FY30
Train Paths																	
Goonyella	3	M.L. - Coppabella to Jilalan	13,971	13,965	14,016	13,972	13,984	14,100	13,981	14,199	14,175	14,170	-	-	-	-	-
	3A	B.L. - Jilalan to Port of Hay Point	13,971	13,965	14,016	13,972	13,984	14,100	13,981	14,199	14,175	14,170	-	-	-	-	-
	3B	B.L. - Hail Creek Mine to South Walker Creek Junction	[redacted]										-	-	-	-	-
	3C	B.L. - Oaky Creek Junction to Coppabella	5,571	5,420	5,653	6,312	6,312	5,510	5,312	5,613	6,295	6,281	-	-	-	-	-
	3D	B.L. - Coppabella to Wotonga	6,671	6,804	6,621	5,828	5,828	6,708	6,856	6,707	5,811	5,765	-	-	-	-	-
	3E	B.L. - North Goonyella Mine to Wotonga	2,938	3,320	3,198	3,189	3,189	2,905	3,313	3,191	3,113	3,071	-	-	-	-	-
	3F	B.L. - Blair Athol Mine to Wotonga	2,744	[redacted]				2,755	[redacted]				-	-	-	-	-
Tonnes (M)																	
Goonyella	3	M.L. - Coppabella to Jilalan	135.1	135.0	135.5	135.6	135.7	136.3	135.1	137.3	137.6	137.5	-	-	-	-	-
	3A	B.L. - Jilalan to Port of Hay Point	135.1	135.0	135.5	135.6	135.7	136.3	135.1	137.3	137.6	137.5	-	-	-	-	-
	3B	B.L. - Hail Creek Mine to South Walker Creek Junction	[redacted]										-	-	-	-	-
	3C	B.L. - Oaky Creek Junction to Coppabella	53.2	51.8	54.0	60.7	60.6	52.6	50.7	53.6	60.5	60.3	-	-	-	-	-
	3D	B.L. - Coppabella to Wotonga	64.9	66.2	64.3	57.0	56.9	65.2	66.7	65.2	56.8	56.2	-	-	-	-	-
	3E	B.L. - North Goonyella Mine to Wotonga	28.6	32.4	31.1	31.1	31.0	28.3	32.3	31.0	30.3	29.9	-	-	-	-	-
	3F	B.L. - Blair Athol Mine to Wotonga	26.7	[redacted]				26.8	[redacted]				-	-	-	-	-

Table 7 above represents coal traffic that has a destination of that system's port precinct. Some branch lines are used to transport coal to multiple systems as is the case, for example, where origins on some Goonyella branch lines have a port precinct destination in the GAPE or Blackwater systems. The capacity associated with those situations is not included in the table above.

7.9.2 Branch line Capacity and System Constraints

ACAR25 confirms that the constraint in the Goonyella System remains the mainline, between Coppabella and the port terminals. Existing access holders and other stakeholders may be interested in understanding whether the mainline capacity can be moved between branch lines (such as via a transfer request).

As in ACAR24, the IE has undertaken a series of Model sensitivities to assess the underlying branch line capacity to assess the level of flexibility in the system. This analysis was undertaken by incrementally moving additional capacity between branch lines. Notably, for all branch lines, even modest movement of +5% capacity into a branch line reduced system throughput. As a result, to assess the potential for transfers to occur between branch lines, the percentage of capacity moved to a branch line was increased progressively until the overall throughput of the system reduced to the level of committed capacity (i.e. the point at which a transfer might be achievable without negatively affecting other access holders).

The relative results of this analysis (i.e. comparing relative branch line capacity) were very similar to ACAR24 however the magnitude of the excess capacity reduced as Goonyella System available capacity in FY26 is approximately half that of ACAR24's FY25.

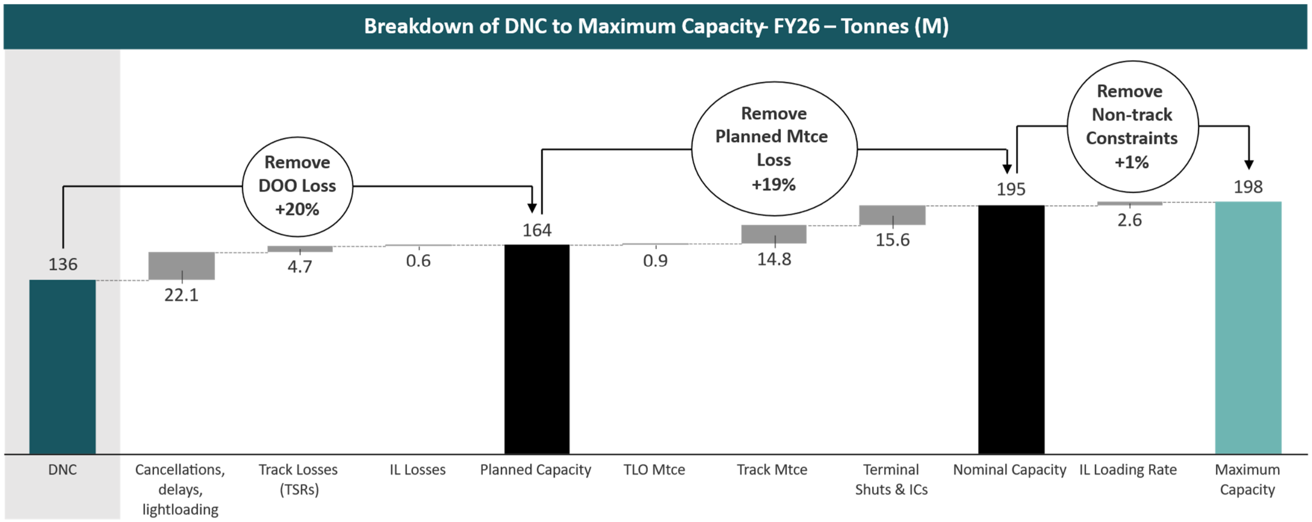
Table 8 - Goonyella System FY26 Branch line sensitivity per month

Branch Line Capacity in excess of Committed Capacity- FY26													
Line	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Total**
3A B.L. - Jilalan to Port of Hay Point	-80	+5	-30	+60	-90	+160	+10	-60	+35	+120	-10	+145	**+265**
3 M.L. - Coppabella to Jilalan	-80	+5	-30	+60	-90	+160	+10	-60	+35	+120	-10	+145	**+265**
3B B.L. - Hail Creek Mine to South Walker Creek Junction	+85	+110	+75	+85	+110	+100	+75	+65	+80	+95	+70	+95	**+1,045**
3C B.L. - Oaky Creek Junction to Coppabella	+45	+110	+75	+115	+70	+160	+90	+55	+110	+135	+85	+130	**+1,180**
3D B.L. - Coppabella to Wotonga	+100	+125	+95	+100	+105	+110	+90	+80	+95	+110	+90	+115	**+1,215**
3E B.L. - North Goonyella Mine to Wotonga	+30	+55	+55	+75	+15	+95	+55	+40	+70	+90	+65	+95	**+740**
3F B.L. - Blair Athol Mine to Wotonga	+55	+100	+70	+95	+45	+120	+85	+75	+95	+115	+45	+125	**+1,025**

7.9.3 Reconciliation to Maximum Capacity

To illustrate the factors that restrict Model throughput to DNC, the IE has undertaken a series of Model cases that progressively add restrictions on the system, incorporating three main constraints: non-track constraints, planned maintenance losses and day of operations losses. **Figure 26** illustrates the relative effect of different constraint factors and highlight the relative potential of operating improvements to release latent capacity.

Figure 26 – Goonyella System Maximum Capacity



7.10 Capacity Risks and Opportunities

The Goonyella System remains the system in which track capacity and demand are most closely matched. The ACAR25 available capacity of 140 train paths is well within the IE's estimate of Model accuracy, suggesting that the system is essentially balanced. This implies that in an environment where demand increases to full contract levels, constraints will become particularly apparent.

While the recent assessment of potential Goonyella TAs concluded that there are no attractive capital investment opportunities to increase capacity, the ACAR results (including the maximum capacity analysis in **Section 7.9.3** above) suggests that opportunities exist to reduce both planned maintenance losses and operational losses (particularly light-loading).

ACAR25 adopts a slightly more conservative approach to capacity, particularly in the selection of consists, but the results also suggest that the Goonyella System has removed some of the volatility in monthly results evident in prior ACAR processes. This indicates a system where practical annual throughput does not rely as heavily on an assumption of significant swings in month-to-month coal production.

AN and the IE are continuing to progress work on better data gathering and analysis of train movements between Jilalan and the terminals to better understand the extent to which congestion in the port mini-cycle limits capacity including by comparison with apparent constraints down Connors Range between Hatfield and Yukan.

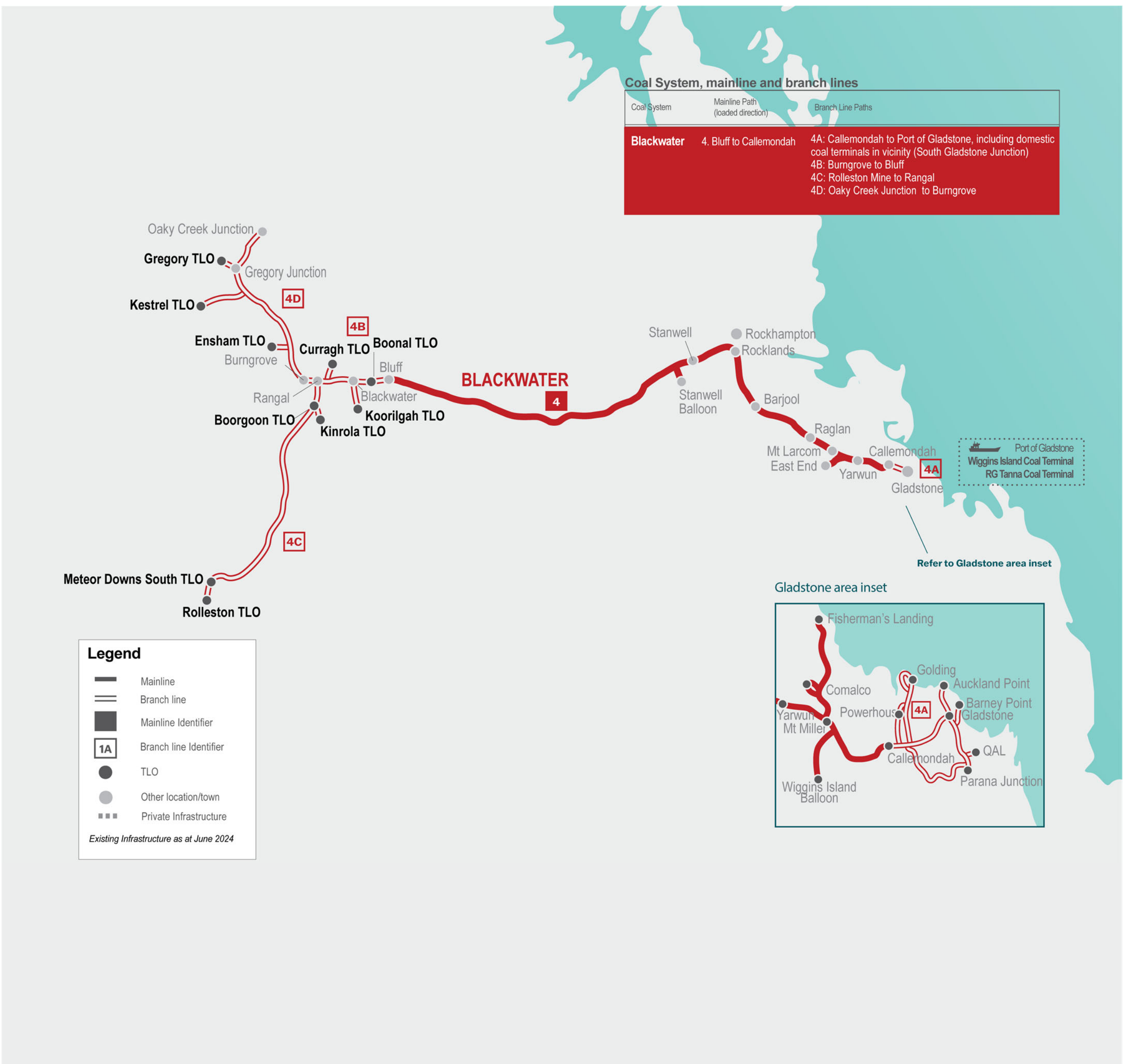
8. Blackwater System

8.1 Overview of System

The Blackwater System, shown in **Figure 27**, includes the mainline and branch lines comprising the rail corridor from terminals at Wiggins Island Coal Export Terminal and RG Tanna Coal Terminal to Rolleston mine, Oaky Creek Junction and spurs lines connecting coal mine loading facilities to those corridors. The Blackwater System also has a number of domestic coal users that are considered.

Much of the Moura System traffic utilises the Blackwater System branch from Callemondah to the Port of Gladstone, encompassing RG Tanna and the Gladstone Power Station creating a strong relationship between these two systems.

Figure 27 - Blackwater System



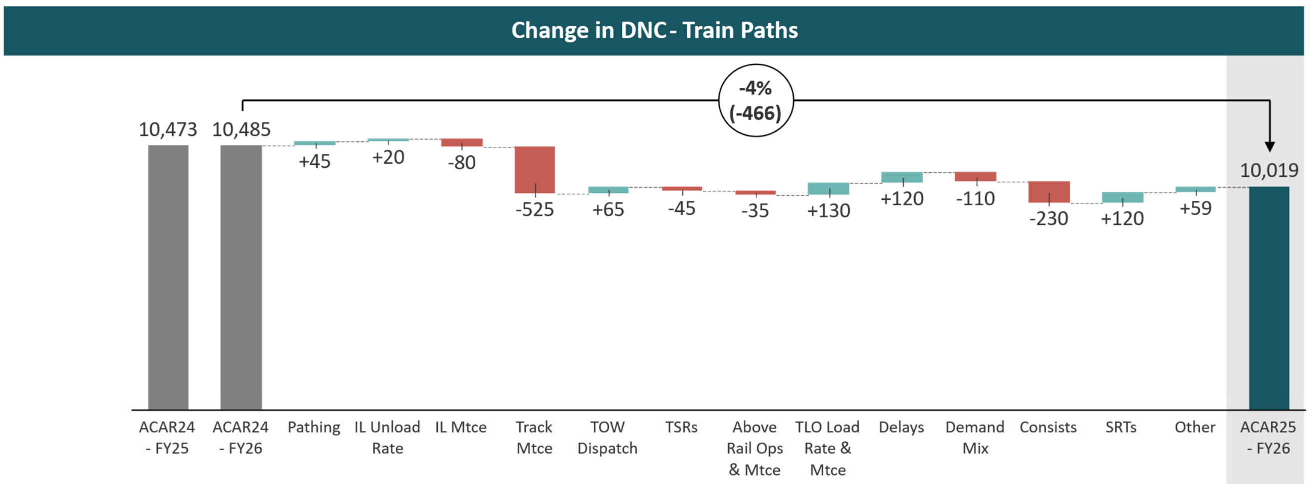
8.2 Deliverable Network Capacity

8.2.1 Changes Since ACAR24

The Blackwater System FY26 DNC has seen a reduction of ~465 train paths (-4.0%) to 10,019 compared with ACAR24. The most significant factors were additional track maintenance (a combination of one additional 60-hour full system closure and increased minor maintenance, offset by the removal of branch line closures and a reduction in major maintenance), and a reduction in consists. When combined with a small reduction in median payload, capacity in tonnage terms has decreased 5% over ACAR24 FY26 to 80.8Mt.

The changes to FY26 capacity are shown in **Figure 28** below and discussed in subsequent sections of this report:

Figure 28 - Blackwater changes from ACAR24 to ACAR25 – FY26



Tonnes (M) *	**84.5**	**84.6**	0.4	0.2	-0.6	-4.2	0.5	-0.4	-0.3	1.0	1.0	-0.9	-1.9	1.0	0.5	**80.8**

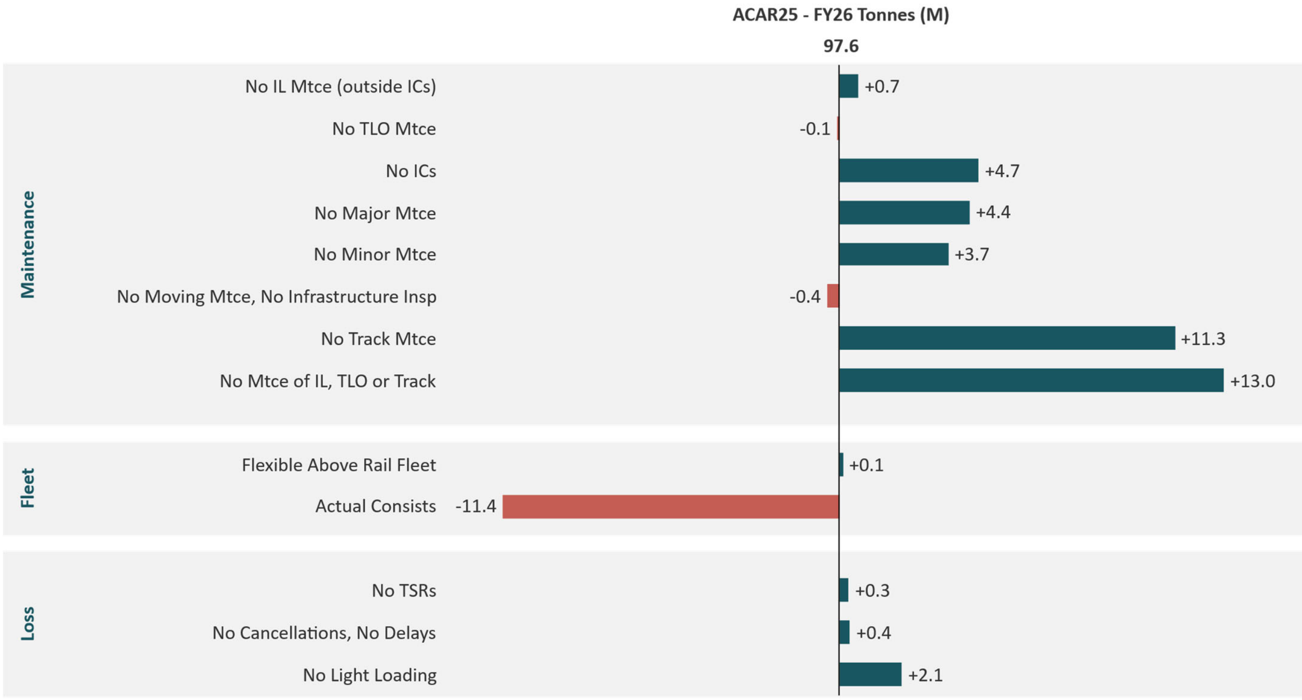
* Tonnes are calculated using the ACAR25 FY26 average payload.

It should be noted that as the Blackwater and Moura systems share a rail dispatch depot (Callemondah), a primary export terminal (RG Tanna Coal Terminal (RGTCT)) and a domestic customer (Gladstone Power Station), their capacities are closely linked, and to some extent inversely related (i.e. releasing constraints on the Blackwater System can reduce Moura System throughput and vice-versa).

8.2.2 Key Input Sensitivities

The IE has also assessed the impact of key operating parameters on DNC, which is presented in tonnes in **Figure 29** below. Due to the interconnected nature of the Blackwater and Moura systems, the sensitivity impact has been assessed as combined systems.

Figure 29 – Blackwater & Moura sensitivity impact to DNC of key operating parameters – FY26



8.3 Modelling Changes

8.3.1 Removal of loaded pathing

As discussed in **Section 3.5.1**, ACAR25 removes the prior modelling assumption of clockface departures for loaded trains at Bluff and Rocklands until the next 20 minute clockface time, even if the track ahead was vacant.

This results in an increase in capacity (in part due to the clockface departure having been implemented twice for each loaded journey), but given the relatively close spacing of Blackwater pathing, the magnitude of change was not particularly significant (+45 trains).

8.3.2 Terminal and Track Maintenance

Terminal Maintenance

Engagement with Gladstone Ports Corporation (GPC) regarding their anticipated FY26 maintenance schedule identified a range of minor inloader shutdowns expected to occur outside rail network shuts in FY26. No such shutdowns are expected for WICET.

Track Maintenance

As discussed in **Section 3.5.4**, the inputs use AN's planned major maintenance programs, including integrated closures, consistent with the approved MRSB scope.

As outlined in AN's MRSB documentation, integrated closure possession hours in the Blackwater System will be 496 hours in FY26 – a reduction of 23 hours (4%) compared with FY25 but with a higher capacity impact as all 496 hours are full system shuts whereas 84 hours of the FY25 maintenance were branch line shuts. AN's MRSB includes planned major maintenance activities outside integrated closures, referred to as "single-line maintenance" activities, which appear to be approximately 18% lower in total possession hours than ACAR24.

Minor maintenance activities increased noticeably in CY2024, continuing a long-term trend first identified in ACAR24. As discussed in **Section 3.5.4**, the IE has revised the estimate of future minor maintenance activities based on the long-term trend, resulting in ~20% additional Blackwater System minor maintenance hours in ACAR25.

The combination of these track maintenance activities has reduced capacity by approximately 525 train paths (~4.2Mt) compared with ACAR24. In aggregate, major and minor maintenance outside integrated closures in FY26 has been assessed as reducing Blackwater and Moura System DNC by approximately 1,270 train paths (~10.3Mt).

8.3.3 Demand Presentation

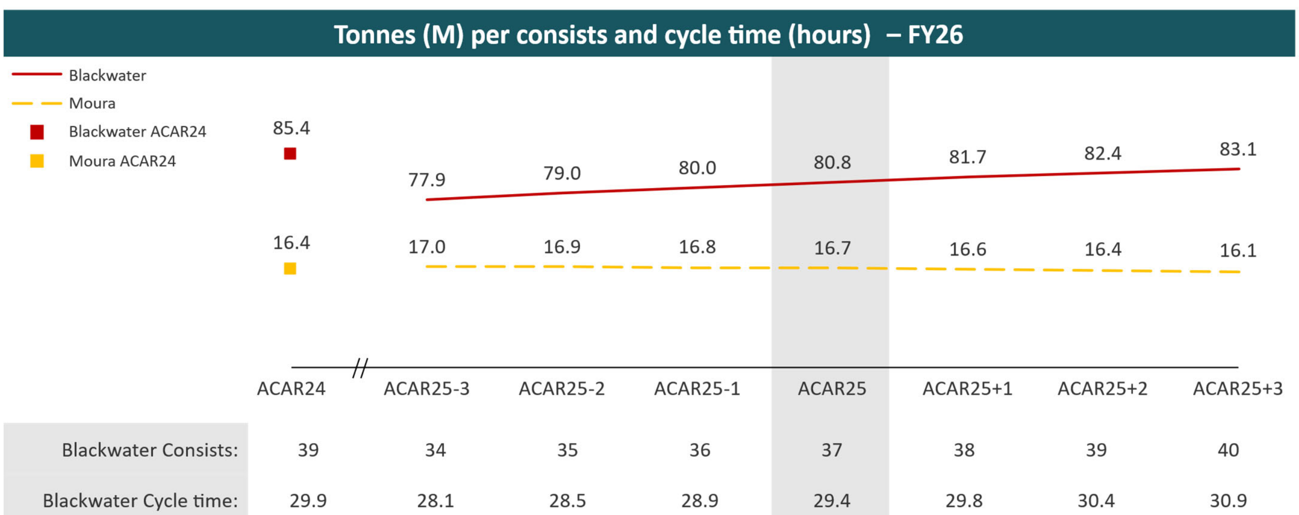
As discussed in **Section 3.3**, for ACAR25 the IE has reduced the maximum demand applied to the Blackwater System from 140% to 120%, reflecting a lower assumption for flexibility in mine production. Given the preference provided in the Blackwater System for supply of coal to the domestic power generating stations (Stanwell and GPS), this also reduces the previous 140% achievement of these destinations which significantly exceeded export destination achievement.

This change reduced Blackwater System capacity by ~110 train paths (~0.9Mt).

8.3.4 Consist Numbers and Cycle Times

As in all capacity assessments, the IE has optimised Blackwater consist numbers within ACAR25. ACAR25 adopts 37 consists for the Blackwater System, a reduction of two consists from ACAR24. This was determined as the optimal outcome considering the impact of consist numbers on Blackwater throughput and cycle time and on throughput in other CQCN systems. Particular attention was paid to throughput in the Moura System as Blackwater and Moura Model results are highly (but inversely) correlated. There was no change in consist numbers in the Moura System as a result of this optimisation.

Figure 30 - Blackwater Consist sensitivity

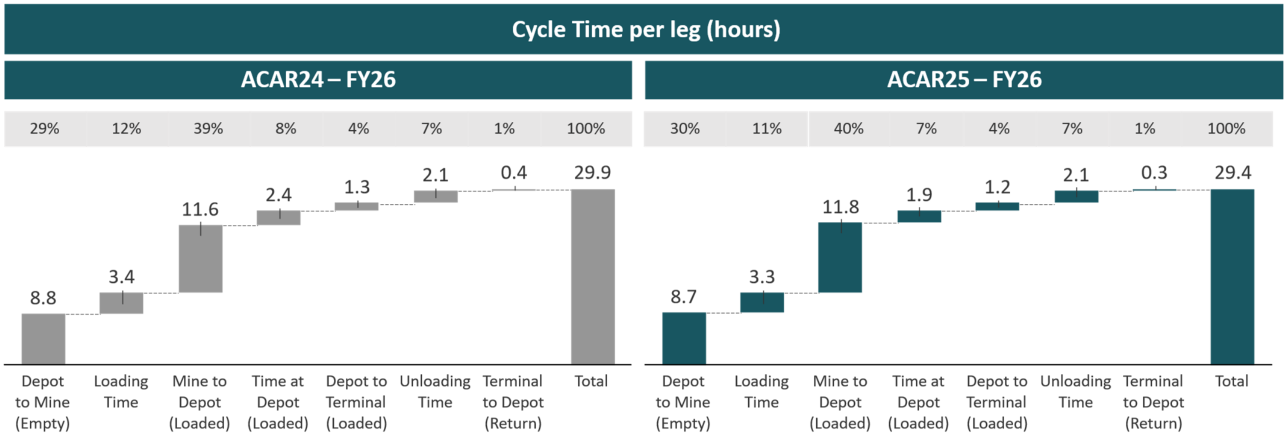


Despite the reduction in consists, average cycle time in the Blackwater System only reduced slightly. This, reflects the influence of other variables, particularly the additional track maintenance.

Table 9 - Blackwater Cycle Time

Cycle Time (Hours)	FY25 (ACAR24)	FY26 (ACAR24)	FY26 (ACAR25)	FY26 Change
Blackwater	30.0	29.9	29.4	-2%

Figure 31 – Blackwater Cycle Time per leg



As a proportion of total cycle time, the long transit legs - mine to depot (loaded) and depot to mine (empty) have increased by 2% compared to ACAR24. This increase was partially offset by a reduction of 0.5 hours waiting loaded at the depot likely as a result of the decrease in consists.

The IE has undertaken a sensitivity of the impact of operator-specific above rail allocation, by allowing both Blackwater System operators to operate to all mines. Combined Blackwater and Moura System DNC would increase by approximately 18 trains (~0.1Mt) under this scenario. Contrary to the same scenario in ACAR24, this suggests limited constraint within the base case due to operator-specific fleet allocation.

8.4 Committed Capacity

Blackwater System committed capacity for FY26 has increased by ~120 train paths as a result of new access requests assessed and executed during FY25.

8.5 DNC and Available Capacity/Existing Capacity Deficit

The combination of changes to both the DNC and committed capacity leaves the Blackwater System able to meet contracted capacity in FY26-FY30, with available capacity of at least ~280 train paths (equivalent to 2.3Mt at median expected payload) during that period. This is a reduction of ~615 train paths compared with ACAR24 FY26.

Capacity outcomes for all years of the ACAR period is outlined below in **Figure 32** in Train paths and **Figure 33** in tonnes.

Figure 32 - Blackwater summary for FY26 to FY30 (Train Paths)

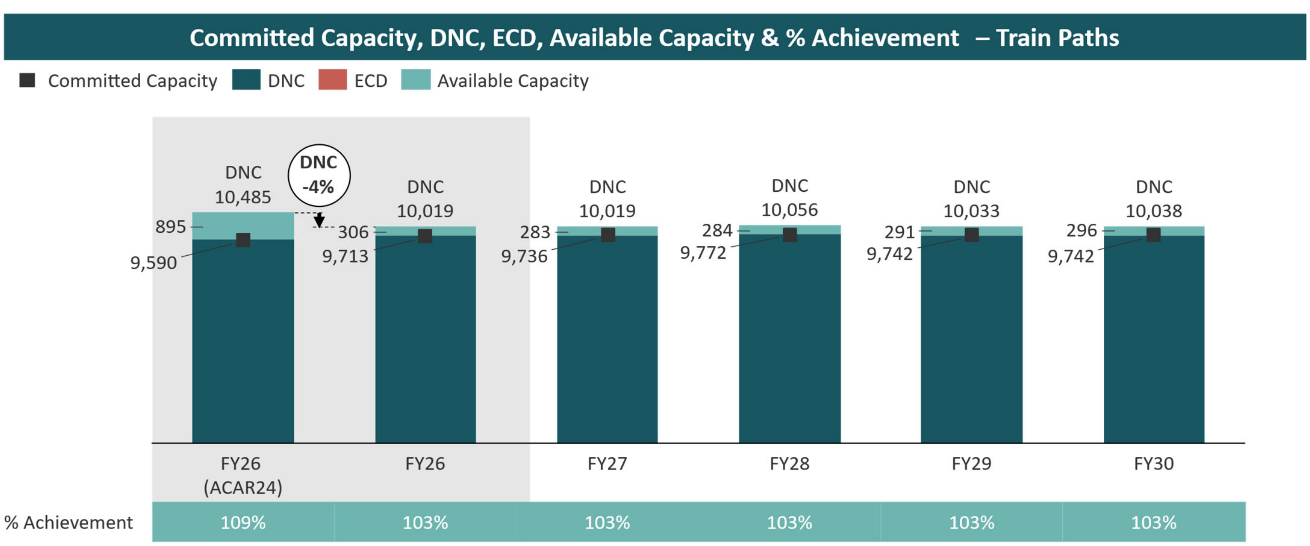
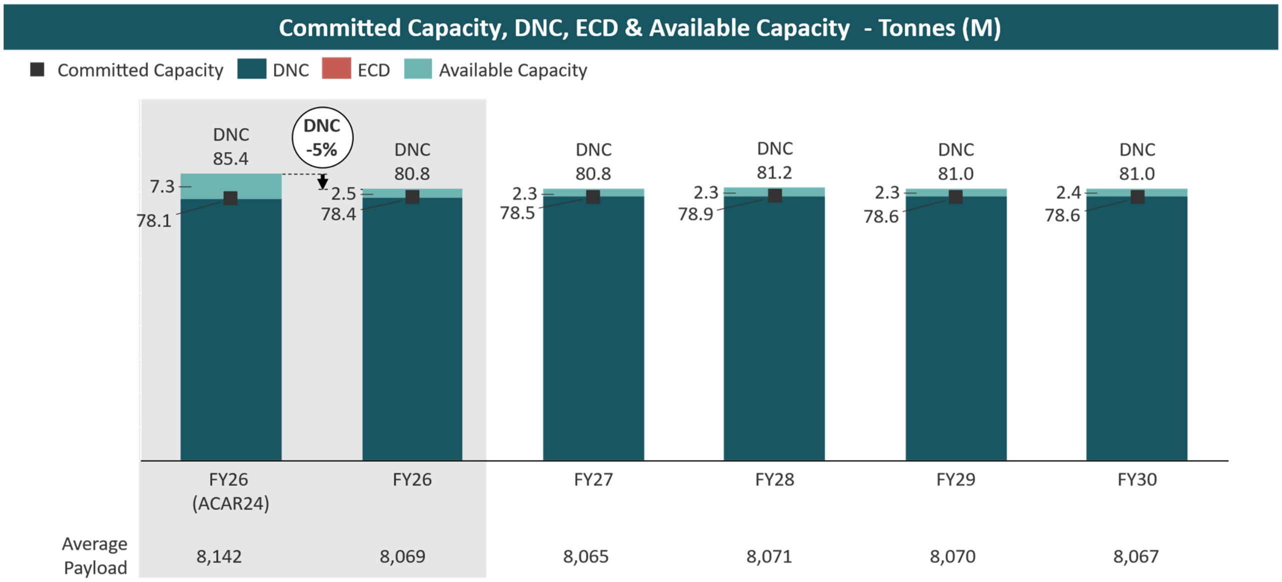


Figure 33 - Blackwater summary for FY26 to FY30 (tonnes)

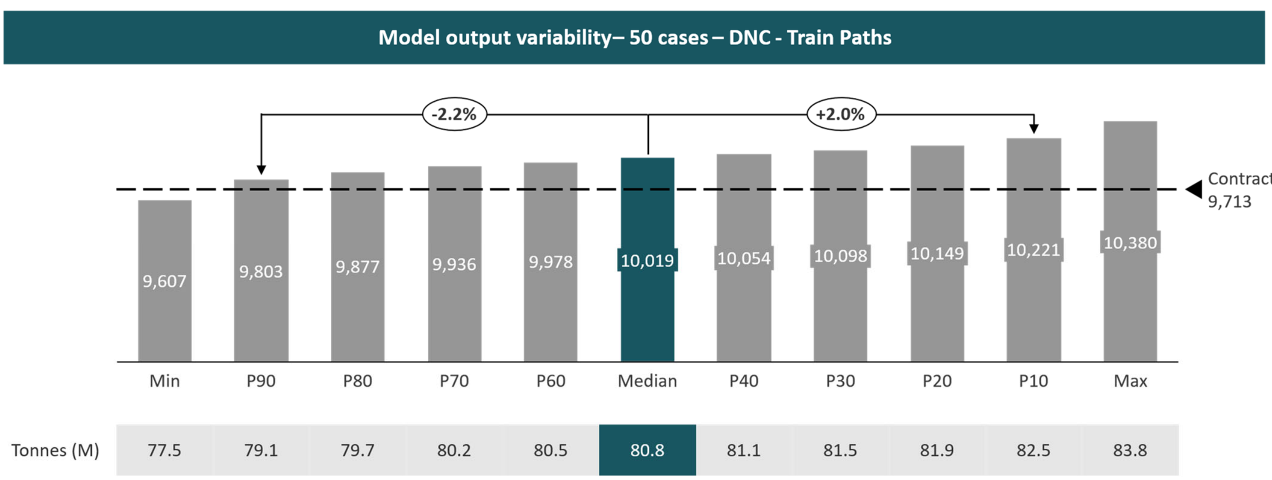


The DNC calculated for the Blackwater System by month for the five-year assessment period is shown in **APPENDIX D: Blackwater System Information**.

8.6 Model Variability

The ACAR25 Blackwater System DNC for FY26 of 10,019 train paths was determined from the median of 50 Model simulation runs. The P90 to P10 range of the DNC was from 9,803 to 10,221 train paths, a variability of ~4%, as shown in **Figure 34** below. As displayed more than 90% of the Model runs achieved committed capacity for FY26.

Figure 34 - Blackwater FY26 DNC – Model variability

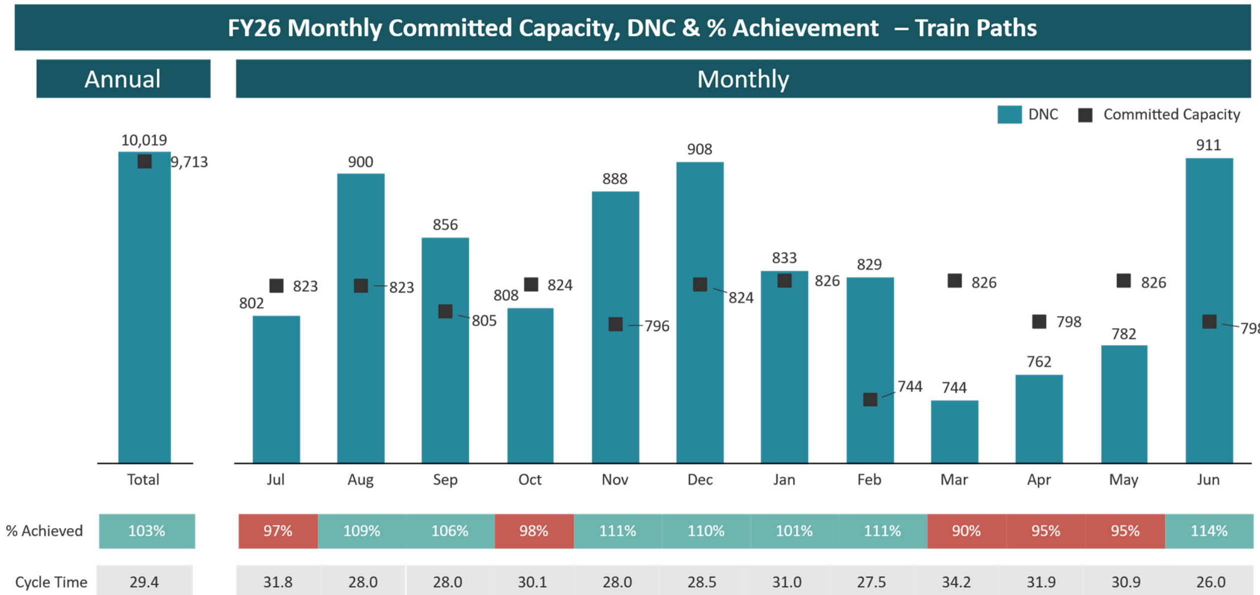


8.7 Monthly Capacity Variability

As shown in **Figure 35** below, FY26 monthly capacity in the Blackwater System appears to be slightly more even compared with ACAR24, with only one month (March) falling below 95% of committed capacity,

Monthly capacity for the full five-year period of the ACAR Model is shown in **APPENDIX C: Goonyella System Information** largely aligned to planned maintenance events.

Figure 35 - Blackwater System FY26 Monthly Capacity



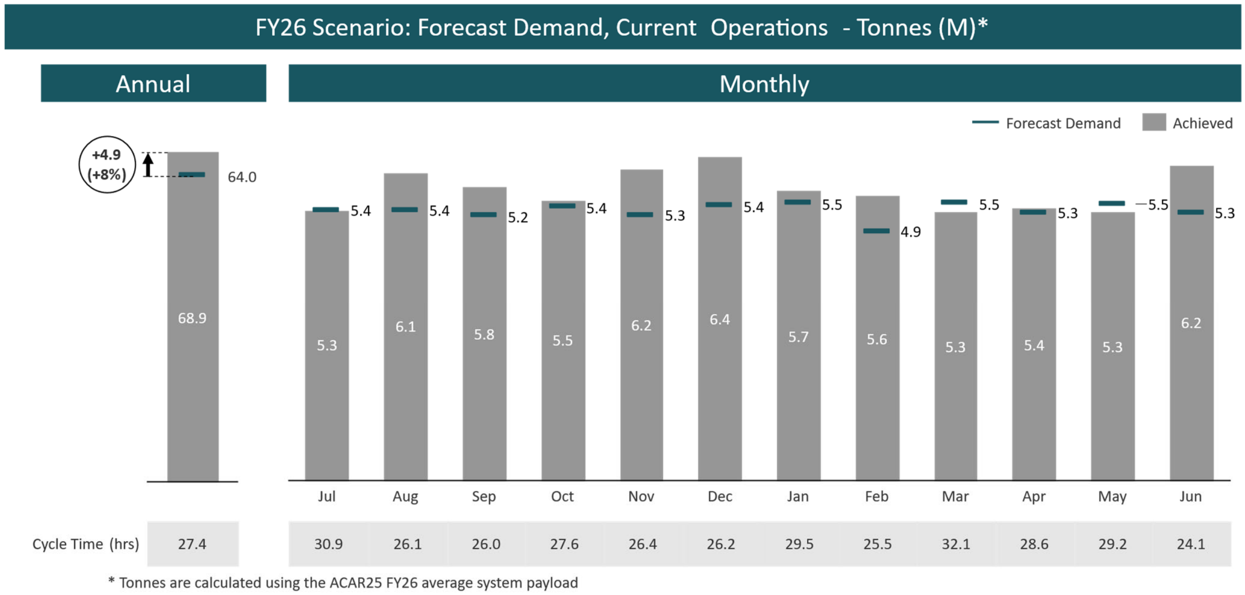
8.8 Forecast Demand/Current Operations Scenario

For ACAR25, the IE has also examined a scenario for the Blackwater System that more closely reflects current levels of demand and current operations in the system.

For this scenario, demand has been represented by the FY26 annual volume forecasts for each origin-destination prepared by AN for submission to the QCA, which uses producer forecasts where available. To reflect seasonal demand patterns, the IE has distributed the annual volume across the months of FY26 following the throughput profile from CY2024. To service this demand, this scenario uses only consists currently operating in the system and cancellation rates unaltered from AN's data.

Using this approach and as shown in **Figure 36,** monthly demand for the Blackwater System is relatively consistent. By contrast, monthly throughput is more variable. The results suggest that capacity is sufficient to meet demand in all months except March and May, although July, October and April appear to be closely matched. Cycle times also show noticeable variability. While 6 monthly results are ~26 hours, the remaining results vary up to a maximum of 32 hours in March. Cycle times do correlate strongly and inversely to throughput, providing some validation of the Model results.

Figure 36 – Blackwater System FY26 Scenario



8.9 System Constraints

8.9.1 Mainline and Branch line DNC

The IE is required to determine DNC for each system's mainline and branch lines. In determining system DNC, the IE increases demand for each origin-destination pair in a system simultaneously until the maximum throughput is reached. The resulting DNC, committed capacity and ECD values, where applicable, per mainline and branch line for Blackwater are outlined below in **Table 10** in train paths and tonnes.

The DNC values below reflect the proportion of current committed capacity in each branch line.

Table 10 - Blackwater values per Mainline and Branch line for FY26 to FY30

System	Mainline / Branch Line	Committed Capacity					DNC					ECD				
		FY26	FY27	FY28	FY29	FY30	FY26	FY27	FY28	FY29	FY30	FY26	FY27	FY28	FY29	FY30
Train Paths																
Blackwater	4 M.L. - Bluff to Callemondah	9,713	9,736	9,772	9,742	9,742	10,022	10,024	10,059	10,035	10,036	-	-	-	-	-
	4A B.L. - Callemondah to Port of Gladstone	9,348	9,371	9,418	9,389	9,389	9,585	9,587	9,633	9,611	9,612	-	-	-	-	-
	4B B.L. - Burngrove to Bluff	9,713	9,736	9,772	9,742	9,742	10,022	10,024	10,059	10,035	10,036	-	-	-	-	-
	4C B.L. - Rolleston Mine to Rangal	4,105	4,105	4,118	4,105	4,105	4,141	4,134	4,151	4,142	4,141	-	-	-	-	-
	4D B.L. - Oaky Creek Junction to Burngrove	2,800	2,823	2,850	2,841	2,841	3,011	3,023	3,043	3,032	3,033	-	-	-	-	-
Tonnes (M)																
Blackwater	4 M.L. - Bluff to Callemondah	78.4	78.5	78.9	78.7	78.6	80.9	80.9	81.2	81.0	81.0	-	-	-	-	-
	4A B.L. - Callemondah to Port of Gladstone	75.5	75.6	76.0	75.8	75.8	77.4	77.3	77.8	77.6	77.6	-	-	-	-	-
	4B B.L. - Burngrove to Bluff	78.4	78.5	78.9	78.7	78.6	80.9	80.9	81.2	81.0	81.0	-	-	-	-	-
	4C B.L. - Rolleston Mine to Rangal	33.6	33.7	33.8	33.7	33.7	33.9	33.9	34.0	34.0	34.0	-	-	-	-	-
	4D B.L. - Oaky Creek Junction to Burngrove	22.0	22.2	22.4	22.3	22.3	23.7	23.7	23.9	23.8	23.8	-	-	-	-	-

Note that **Table 10** above represents coal traffic that has a destination of that system's Port Precinct. Some branch lines are used to transport coal to multiple systems as is the case, for example, where origins on some Goonyella branch lines have a Port Precinct destination in the GAPE or Blackwater systems. The capacity associated with those situations is not included in the table above.

8.9.2 Branch line Capacity and System Constraints

Interpretation of the ACAR results confirm that the constraint in the Blackwater System remains as Branch 4A, Callemondah to Port of Gladstone (the track network between Callemondah and RGTCT). While this branch has capacity in excess of committed capacity (as shown in **Table 11** below), it is only marginally higher than the DNC for the system – indicating this branch is the constraint.

To consider whether flexibility exists within the other branch lines, the IE has undertaken a series of Model sensitivities to "flex" the distribution of capacity in the system. The results of this analysis were generally consistent with ACAR24 although a reduction in spare capacity mirrors the overall DNC result (615 train paths). This analysis suggests that branch lines 4C and 4D have significant latent capacity beyond their committed capacity (+300 to 495 per month).

The analysis also indicates that the Blackwater mainline continues to have significant latent capacity, suggesting that additional demand of up to ~200 trains per month (~130 on average) could be accommodated to WICET (but not to RGTCT).

These results together allow the following conclusions to be drawn:

- The system is constrained in accommodating additional (new) capacity to RGTCT;
- Transfers between branch lines where the original and new destination are both RGTCT should be achievable;
- Substantial new capacity is only likely available to WICET, and branch line capacity should not be a constraint.

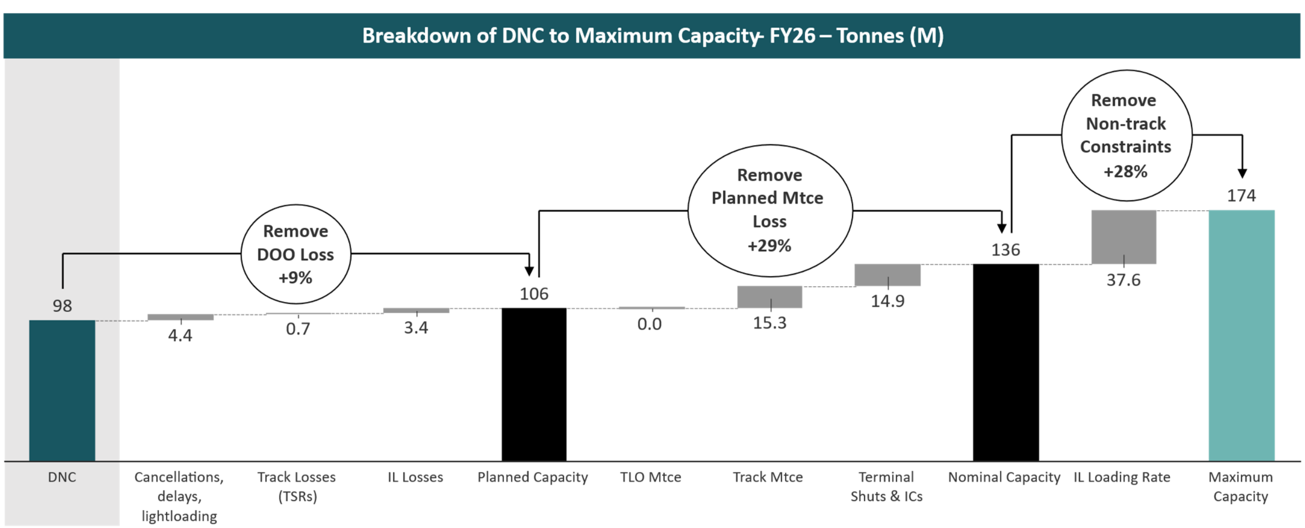
Table 11 - Blackwater System Branch line Sensitivity per month (Capacity in excess of committed capacity)

Branch Line Capacity in excess of Committed Capacity- FY26													
Line	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
4A B.L. - Callemondah to Port of Gladstone	0	+45	+65	-15	+105	+105	+30	+90	-55	-20	-55	+135	**+430**
4 M.L. - Bluff to Callemondah	+100	+165	+205	+35	+230	+235	+175	+220	+30	-5	+40	+230	**+1,660**
4B B.L. - Burngrove to Bluff	+100	+165	+205	+35	+230	+235	+175	+220	+30	-5	+40	+230	**+1,660**
4C B.L. - Rollestone Mine to Rangal	+65	+120	+95	+60	+130	+145	+75	+120	+35	+35	+50	+140	**+1,070**
4D B.L. - Oaky Creek Junction to Burngrove	+95	+115	+175	+85	+145	+150	+110	+140	+75	+70	+85	+145	**+1,390**

8.9.3 Reconciliation to Maximum Capacity

To illustrate the factors that restrict Model throughput to DNC, the IE has undertaken a series of Model cases that progressively add restrictions on the system, incorporating three main constraints: non-track constraints, planned maintenance losses and day of operations losses. This illustrates the relative effect of different constraint factors and highlight the relative potential of operating improvements to release latent capacity.

Figure 37 – Blackwater and Moura Systems Maximum Capacity



8.10 Capacity Risks and Opportunities

While the Blackwater Systems' ability to meet full contracted capacity appears to be robust, there are several opportunities to improve the understanding of constraints within the system via the use of the CQCN Model.

Interactions around Callemondah to RGTCT either side of the single-track cooling channel bridge (including empty GPS trains) are among the most complex train interactions in the CQCN. Ensuring that the representation of this area in the Model aligns as closely with AN's operations as possible should assist in confirming the source and extent of the apparent Blackwater System constraint (and possible mitigation actions if required).

Similarly, there is an additional opportunity to assess and adjust any impact on track capacity (particularly Callemondah arrival roads) caused by any restrictions to unloading trains at certain dump stations – including different coal types.

9. Moura System

9.1 Overview of System

The Moura System (shown in **Figure 38** below) includes the rail infrastructure from Callemondah to Moura and Callide and spur lines connecting coal mine loading facilities to those corridors. Moura System traffic also uses branch line 4A Callemondah to Port of Gladstone of the Blackwater System and the track routes through Gladstone to QAL.

Figure 38 - Moura System

9.2 Deliverable Network Capacity

9.2.1 Changes since ACAR24

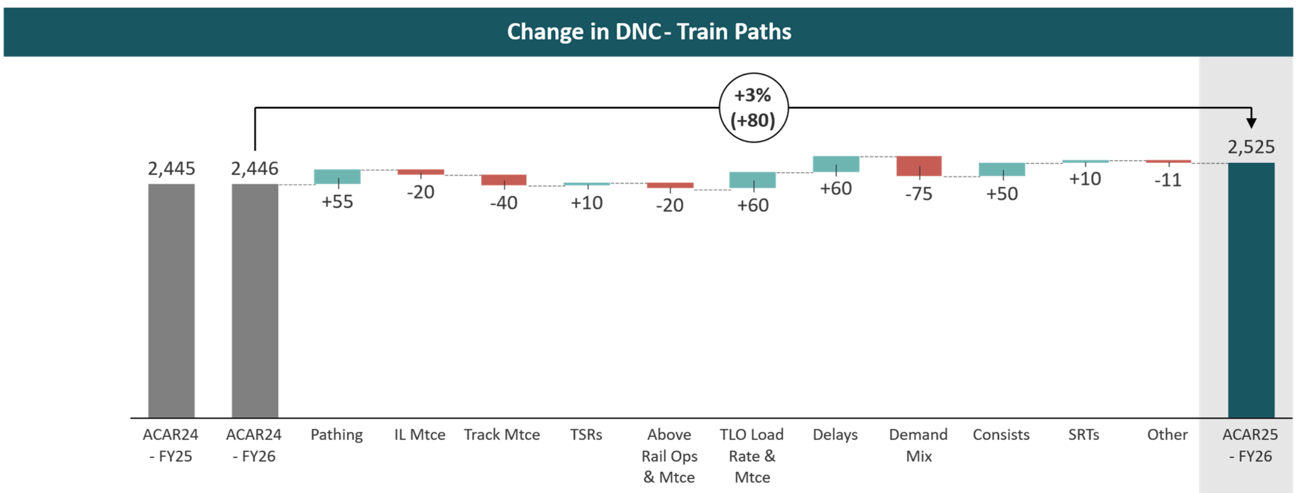
ACAR25 results in minimal changes in the evaluation of capacity in the Moura System. The primary factor affecting system capacity remains the performance of the Blackwater System, specifically how Blackwater trains compete with Moura for access to shared unloading capacity at the RG Tanna terminal.

FY26 DNC for Moura has increased marginally to 2,525 train paths, 80 (+3%) train paths more than FY26 in ACAR24. The IE attributes this change largely to the reduction in FY26 Blackwater System throughput resulting in a marginal increase in achievement for RGTCT-bound Moura trains.

Median payload has reduced by 1%, and thus capacity in tonnage terms increases 2% to 16.7Mt.

Although few are significant, the indicative magnitude of the various changes to FY26 capacity are shown in **Figure 39** below.

Figure 39 - Moura indicative changes from ACAR24 to ACAR25 – FY26



Tonnes (M) *	**16.2**	**16.2**	0.4	-0.1	-0.3	0.1	-0.1	0.4	0.4	-0.5	0.3	0.1	-0.1	**16.7**

* Tonnes are calculated using the ACAR25 FY26 average payload.

9.2.2 Key Input Sensitivities

An assessment has also been performed of the impact on the combined Blackwater and Moura Systems' DNC of changes to key operating parameters, these are represented in tonnes in **Figure 29** at **Section 8.2.2** of this report.

9.3 Modelling Changes

9.3.1 Removal of loaded pathing

As discussed in **Section 3.5.1**, ACAR25 removes the prior modelling assumption of clockface departures for loaded trains at Dumgree until the next 90 minute clockface time, even if the track ahead was vacant.

Despite the previously long separation between trains, removing this constraint has seen only a modest improvement in Moura System capacity (+55 trains) due to relatively low daily volumes in the Moura System.

9.3.2 Terminal and Track Maintenance

Terminal Maintenance

Like the Blackwater System, Moura capacity reduced slightly as a result of additional terminal inloader shutdown hours at RGTCT.

As described in the Blackwater System **Section 8.3.2** of this report, no changes have been made to inloader rates or delay assumptions.

Track maintenance

As discussed in **Section 3.5.4**, the inputs use AN's planned major maintenance programs, including integrated closures, consistent with the approved MRSB scope.

There has been no significant change in the profile of integrated closures in the Moura System, which includes two 84-hour closures, however the IE has classified AN's expected "maintenance windows" of 10 and 24 hours as integrated closures for modelling purposes. The Blackwater integrated closure in April has been modified to ensure Moura trains can access the RGTCT, consistent with AN contingency plan during that period.

There were no major changes to AN's planned major maintenance activities outside integrated closures. Based on the IE's review of minor maintenance history there was a small increase in the capacity impact of minor maintenance.

Overall, track maintenance activities have reduced capacity in the Moura System by approximately 150 train paths (~1.0Mt) compared with ACAR24.

9.3.3 TLO Performance and Delays

Moura System capacity did see an improvement from updated TLO parameters, particularly load rates. The system also saw benefits from the revised approach to delays.

Together these inputs resulted in a capacity increase against ACAR24 for FY26 of 120 train paths (~0.8Mt).

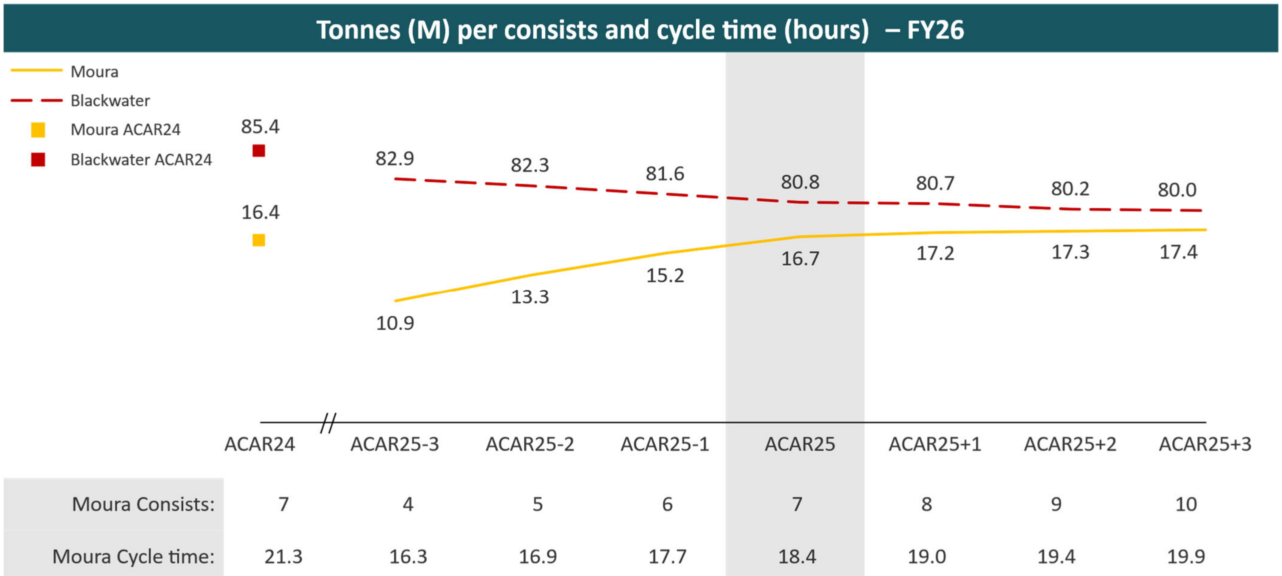
9.3.4 Committed Capacity and Demand Presentation

There has been no change in Moura System committed capacity between FY25 and FY26, however demand applied to the Model has been restricted to 120% as discussed in **Section 3.3** which has reduced throughput to QAL (which is not affected by the Callemondah precinct constraint affecting the Moura System).

9.4 Consist Numbers and Cycle Time

Although the IE has generally reduced consist numbers in ACAR25, no change was made to assumptions for the Moura System. The observed benefit in Moura System capacity is due to the reduction in Blackwater System consists, which provide additional opportunities for Moura trains to unload at RGTCT.

Figure 40 - Moura Consist sensitivity



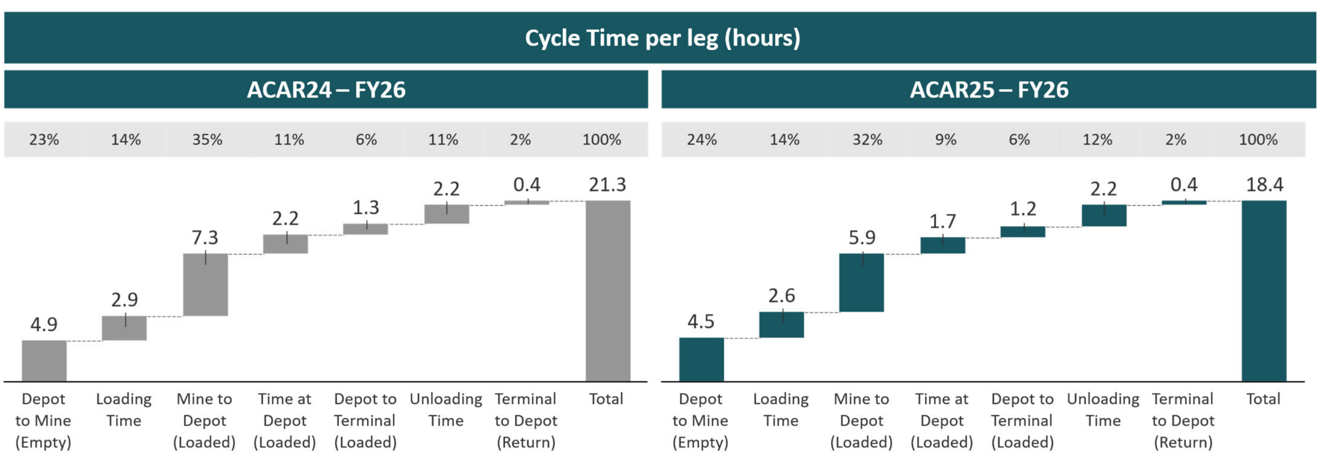
The FY26 median Modelled train cycle time for the Moura System of 18.4 hours has reduced by 2.9 hours (14%) since ACAR24.

Table 12 - Moura Cycle Time

Cycle Time (Hours)	FY25 (ACAR24)	FY26 (ACAR24)	FY26 (ACAR25)	FY26 Change
Moura	21.2	21.3	18.4	-13%

As shown in **Figure 41** below, the change in cycle time was largely attributable to a reduction in mine to depot (loaded) and time at depot (loaded).

Figure 41 – Moura System Cycle Time per leg



9.5 DNC and Available Capacity/Existing Capacity Deficit

Given the increase in DNC and stable committed capacity for the Moura System, the Moura System has no existing capacity deficit in any of the five years of the ACAR period and sees a slight increase in available capacity.

Capacity outcomes for all years of the ACAR period is outlined below in **Figure 42** in train paths and **Figure 43** in tonnes.

Figure 42 - Moura summary for FY26 to FY30 (Train Paths)

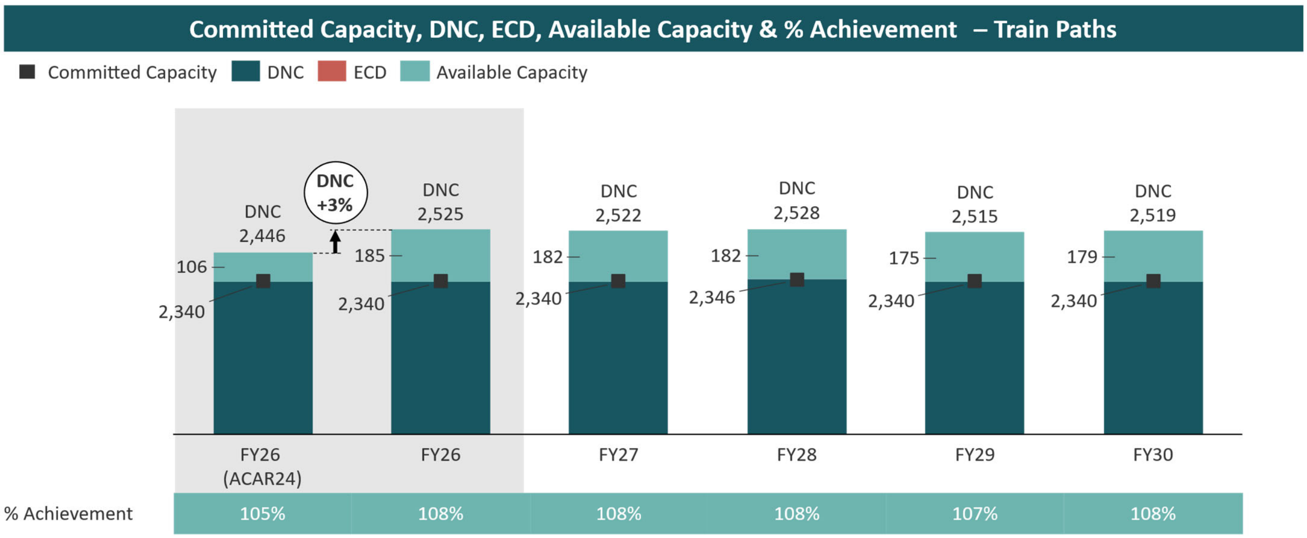
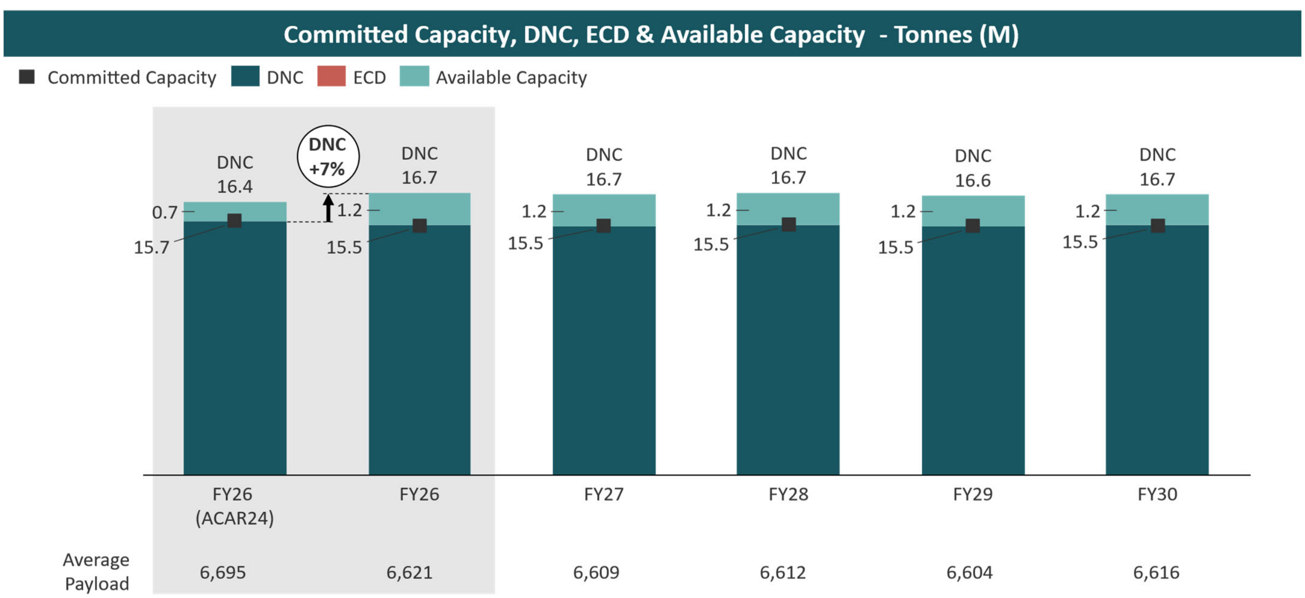


Figure 43 - Moura summary for FY26 to FY30 (tonnes)

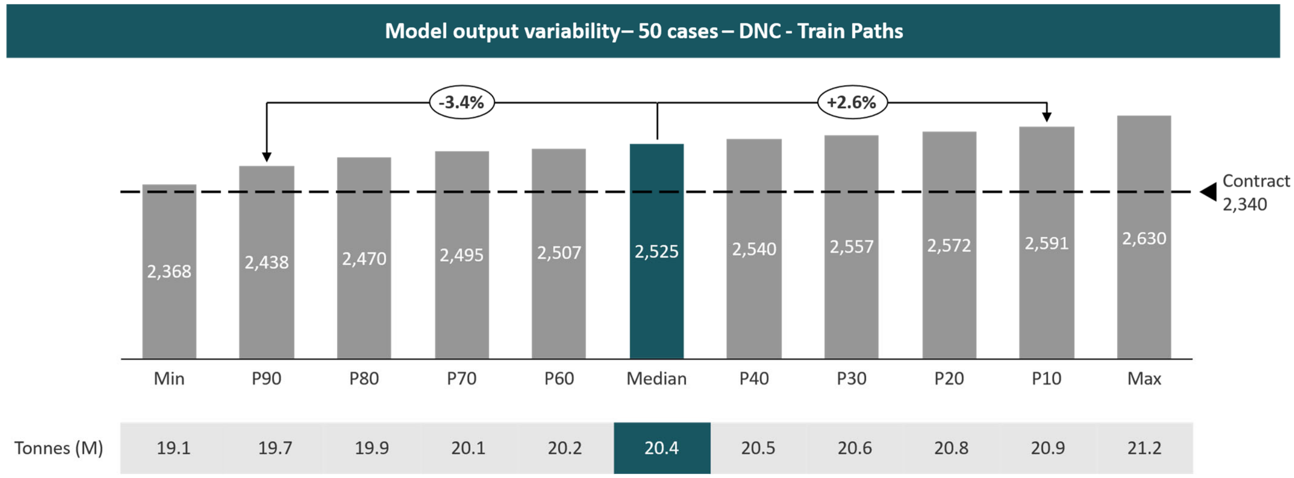


The DNC calculated for the Moura System by month for the five-year assessment period is shown in **APPENDIX E: Moura System Information.**

9.6 Model Variability

The ACAR25 Moura System DNC for FY26 of 2,525 train paths was determined from the median of 50 Model simulation runs. The P90 to P10 range of the DNC was from 2,438 to 2,591 train paths as shown in **Figure 44**. All Model runs achieved committed capacity for FY26.

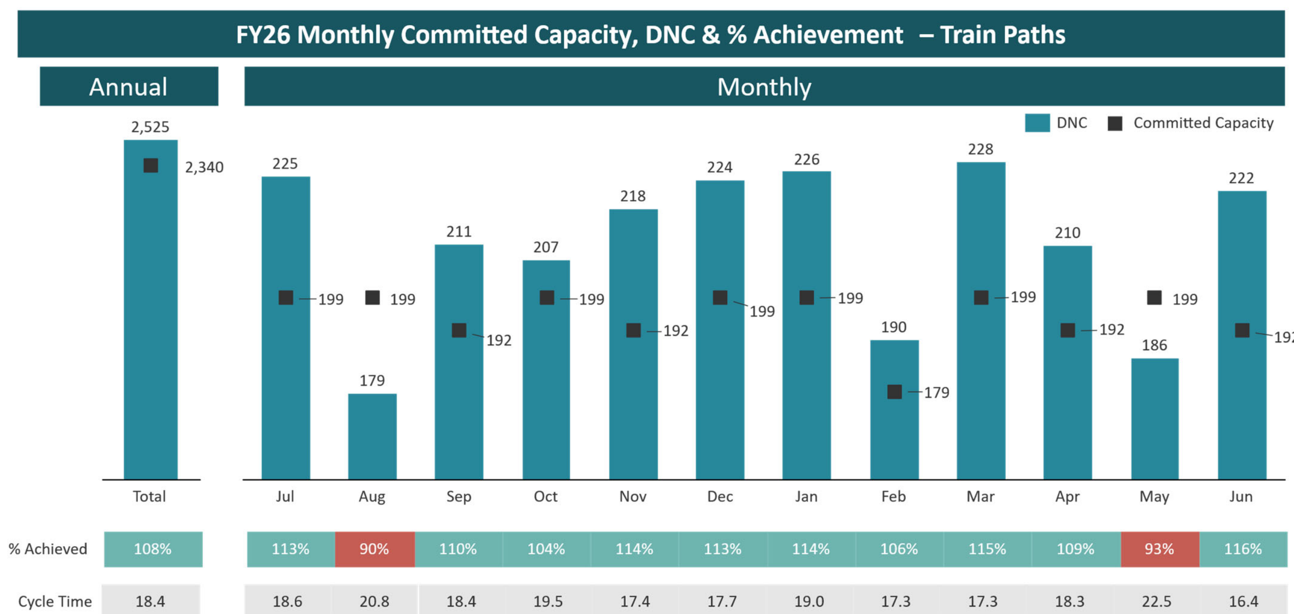
Figure 44 - Moura FY26 DNC – Model variability



9.7 Monthly Capacity Variability

Monthly FY26 capacity in the Moura System is similar to FY25, with capacity ranging from 179 to 228 train paths, but is slightly more variable than FY25 (standard deviation of 9%). This represents a range from 10% below committed capacity to 15% above committed capacity, as shown in **Figure 45** below.

Figure 45 – Moura System FY26 Monthly Capacity



9.8 System Constraints

9.8.1 Mainline and Branch line DNC

The IE is required to determine DNC for each system's mainline and branch lines. The DNC, committed capacity and ECD values, where applicable, per mainline and branch line for Moura are outlined below in **Table 13** in train paths and tonnes.

Table 13 - Moura values per Mainline and Branch line for FY26 to FY30

System	Mainline / Branch Line		Committed Capacity					DNC					ECD				
			FY26	FY27	FY28	FY29	FY30	FY26	FY27	FY28	FY29	FY30	FY26	FY27	FY28	FY29	FY30
Train Paths																	
Moura	5	M.L. - Dumgree to Callemondah	2,340	2,340	2,346	2,340	2,340	2,524	2,517	2,525	2,511	2,519	-	-	-	-	-
	5A	B.L. - Earlsfield to Dumgree	2,340	2,340	2,346	2,340	2,340	2,524	2,517	2,525	2,511	2,519	-	-	-	-	-
	5B	B.L. - Earlsfield to Callide	[redacted]														
	5C	B.L. - Earlsfield to Moura															
Tonnes (M)																	
Moura	5	M.L. - Dumgree to Callemondah	15.5	15.5	15.6	15.5	15.5	16.7	16.7	16.7	16.6	16.7	-	-	-	-	-
	5A	B.L. - Earlsfield to Dumgree	15.5	15.5	15.6	15.5	15.5	16.7	16.7	16.7	16.6	16.7	-	-	-	-	-
	5B	B.L. - Earlsfield to Callide	[redacted]														
	5C	B.L. - Earlsfield to Moura															

9.8.2 Branch line Capacity and System Constraints

In addition to the allocation of DNC throughput to the Moura System branch lines above, the IE has undertaken a series of Model sensitivities to identify constraints in the Moura System and its branch lines. This included reducing demand in the Blackwater System to ensure that capacity at RGTCT was available for Moura System trains.

From this analysis, the IE has concluded that there are no significant constraints on the Moura branch lines and that, were additional capacity available through to RGTCT, Moura System branch lines would not be a constraint. The monthly results of this analysis are outlined below in **Table 14**.

Table 14 - Moura System Branch line Sensitivity per month

Branch Line Capacity in excess of Committed Capacity- FY26													
Line	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Total**
4A B.L. - Callemondah to Port of Gladstone	0	+45	+65	-15	+105	+105	+30	+90	-55	-20	-55	+135	**+430**
5. M.L. - Dumgree to Callemondah	+115	+50	+105	+85	+90	+100	+110	+50	+120	+80	+90	+85	**+1,080**
5A B.L. - Dumgree to Earlsfield	+115	+50	+105	+85	+90	+100	+110	+50	+120	+80	+90	+85	**+1,080**
5B B.L. - Earlsfield to Callide	+70	+40	+70	+55	+60	+70	+70	+35	+75	+50	+55	+60	**+710**
5C B.L. - Earlsfield to Moura	+100	+45	+90	+75	+80	+90	+95	+50	+100	+75	+80	+75	**+955**

9.8.3 Reconciliation to Maximum Capacity

To illustrate the factors that restrict Model throughput to DNC, the IE has undertaken a series of Model cases that progressively add restrictions on the system, incorporating three main constraints: non-track constraints, planned maintenance losses and day of operations losses. This illustrates the relative effect of different constraint factors and highlight the relative potential of operating improvements to release latent capacity and is included in **Section 8.9.3** of this report.

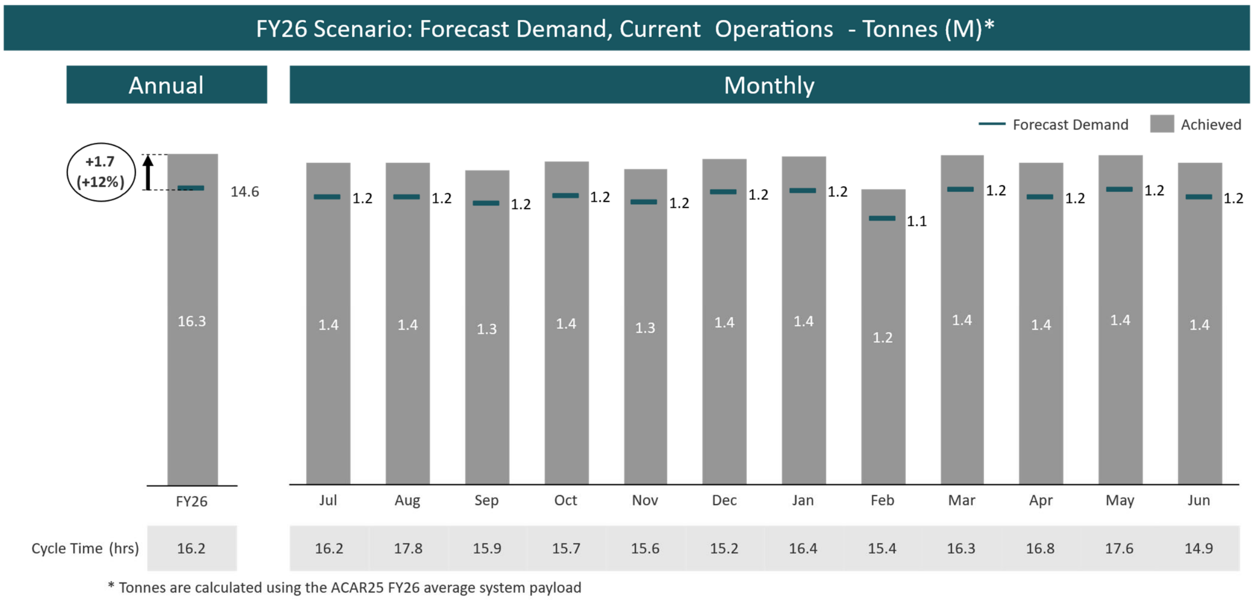
9.9 Forecast demand/Current Operations Scenario

For ACAR25, the IE has also examined a scenario for the Moura System that more closely reflects current levels of demand and current operations in the system.

For this scenario, demand has been represented by the FY26 annual volume forecasts for each origin-destination prepared by AN for submission to the QCA, which uses producer forecasts where available. To reflect seasonal demand patterns, the IE has distributed the annual volume across the months of FY26 following the throughput profile from CY2024. To service this demand, this scenario uses only consists currently operating in the system and cancellation rates unaltered from AN's data.

As shown in **Figure 46**, FY26 forecast demand is 95% of contract and given that the formal DNC assessment for the Moura System indicated sufficient capacity to meet full contractual demand, it is no surprise that the forecast demand scenario sees all months with sufficient capacity to meet forecast. Throughput is expected to be very even although eexpected cycle time shows slightly more variability, aligning with the constrained periods in the ACAR results but on a smaller scale.

Figure 46 – Moura System FY26 Scenario



9.10 Capacity Risks and Opportunities

There appear to be few material risks to capacity in the Moura System. Instead, potential risks and opportunities are likely related to the Blackwater System, particularly around the Callemondah precinct. This includes how Moura trains "merge" with more frequent Blackwater traffic and proceed towards RGTCT.

10. Abbreviations

The following abbreviations may be used throughout this document:

ABBREVIATION	MEANING
ACAR	Annual Capacity Assessment Report
AN	Aurizon Network
CQCN	Central Queensland Coal Network
CY	Calendar Year
DBCT	Dalrymple Bay Terminal
DNC	Deliverable Network Capacity
ECD	Existing Capacity Deficit
FSS	Full System Shut
FY	Financial Year
GAPE	Goonyella to Abbott Point Expansion
HPCT	Hay Point Coal Terminal
ICAR	Initial Capacity Assessment Report
IE	Independent Expert
Model	CQCN Dynamic Simulation Model
MRSB	Maintenance, Renewal & Strategy Budget
Mt	Tonnes per annum in Millions
NQXT	North Queensland Export Terminal
NRG	Gladstone Powerhouse
QAL	Queensland Alumina Limited
QCA	Queensland Competition Authority
RIG	Rail Industry Group
RCS	Remote Control Signalling
RGTCT	RG Tanna Coal Terminal
SOP	System Operating Parameters
SRT	Sectional Running Time
TAs	Transitional Arrangements
TLO	Train Load Out
TSE	Train Service Entitlement
TSR	Temporary Speed Restriction
UT5	Aurizon Network 2017 Access Undertaking
WICET	Wiggins Island Coal Export Terminal

APPENDIX A: Newlands System Information

UT5 requires the IE to determine DNC for each system in the CQCN. Capacity modelling for Newlands and GAPE has been conducted together since they share the same mainline and thus capacity constraint. To meet the UT5 requirements, the IE has presented DNC for each system separately. These values allocate DNC and ECD to various origin-destination pairs from the combined analysis, without judging the source of any capacity deficit.

Figure A1: Newlands summary for FY26 to FY30 (Train Paths and tonnes)

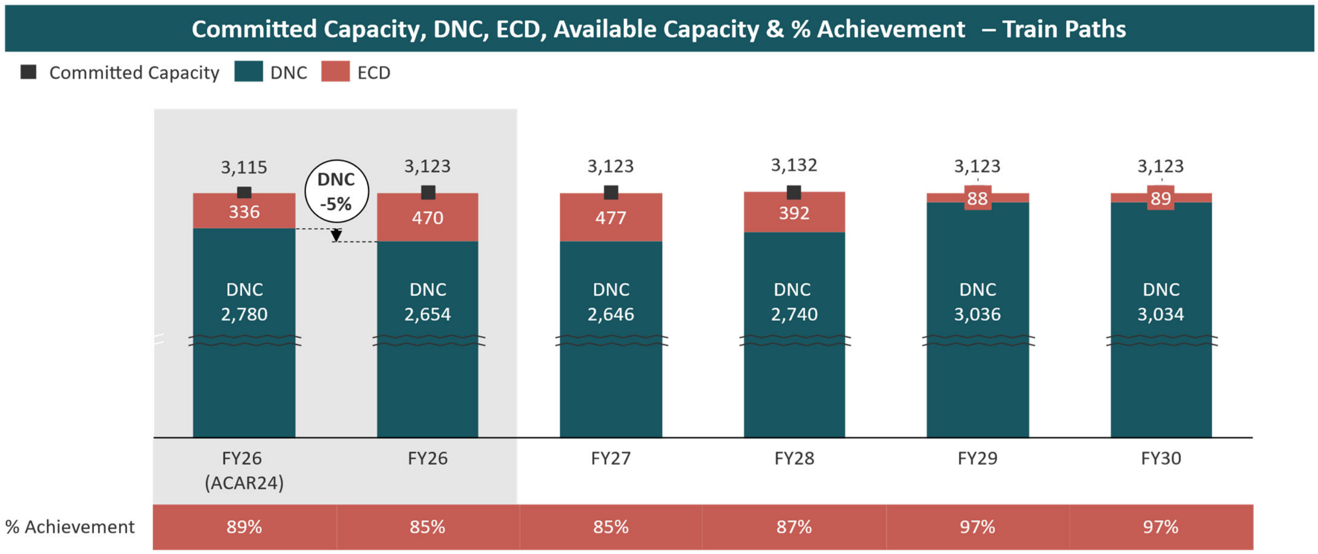


Figure A2: Newlands summary for FY26 to FY30 (tonnes)

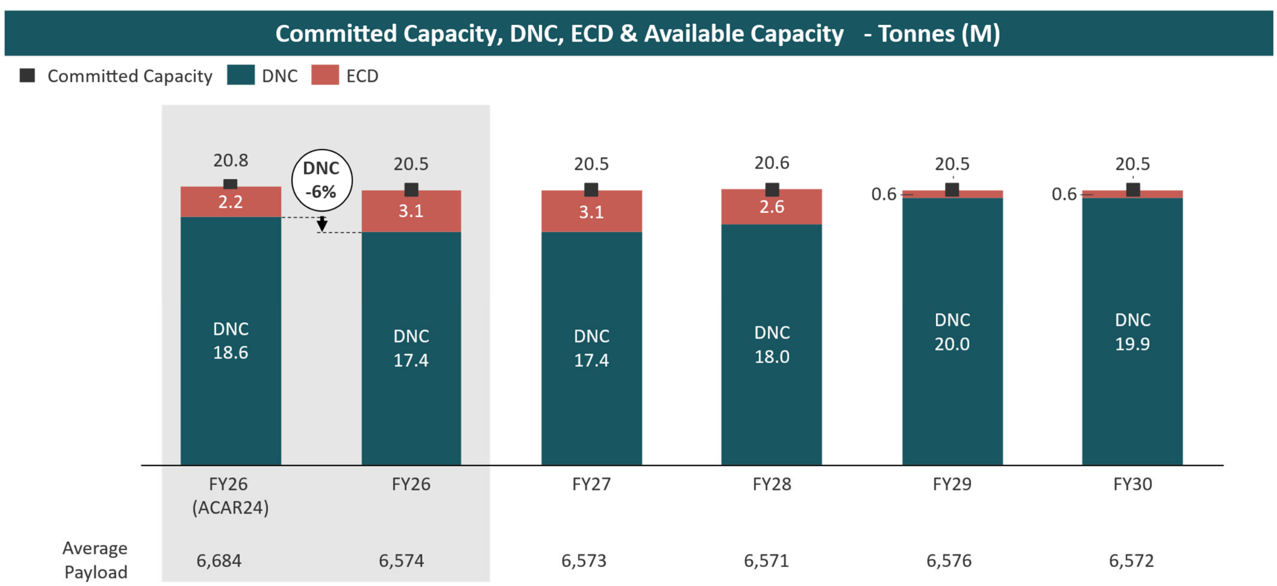
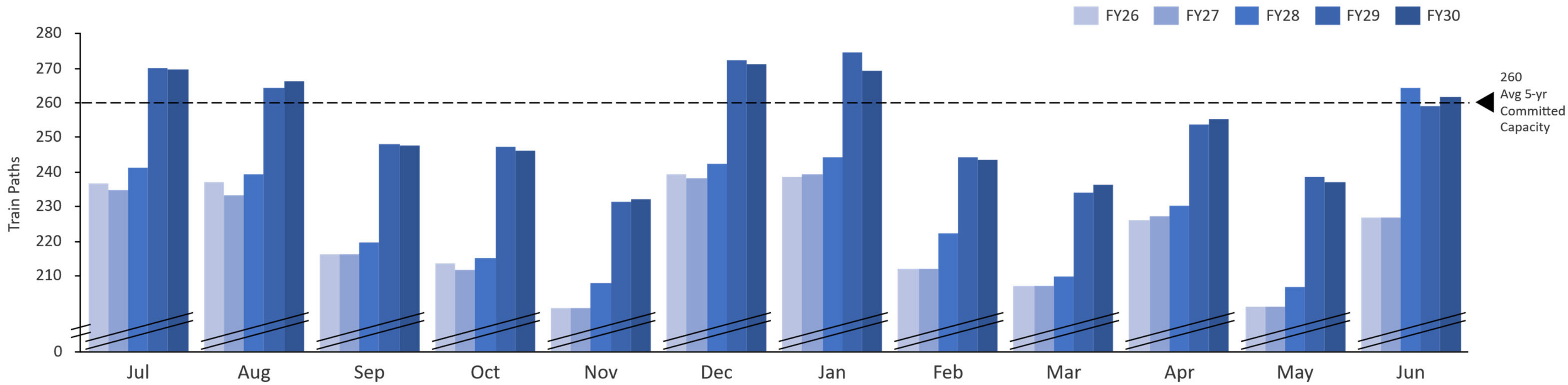


Figure A3: Newlands System DNC per month per year



	Month											
Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY26	237	237	216	214	201	239	239	212	207	226	201	227
FY27	235	233	216	212	201	238	239	212	207	227	201	227
FY28	241	239	220	215	208	242	244	222	210	230	207	264
FY29	270	264	248	247	231	272	275	244	234	254	239	259
FY30	270	266	248	246	232	271	269	244	236	255	237	262

APPENDIX B: GAPE System Information

UT5 requires the IE to determine DNC for each system in the CQCN. Capacity modelling for Newlands and GAPE has been conducted together since they share the same mainline and capacity constraint. To meet the UT5 requirements, the IE has presented DNC for each system separately. These values allocate DNC and ECD to various origin-destination pairs from the combined analysis, without judging the source of any capacity deficit.

Figure B1: GAPE summary for FY26 to FY30 (Train Paths)

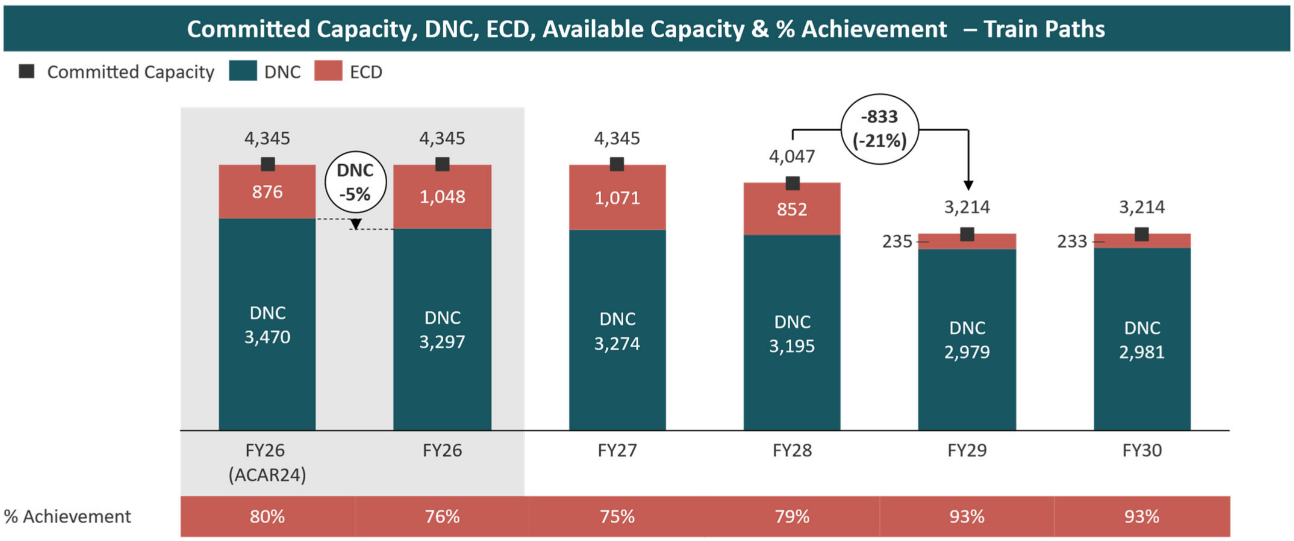


Figure B2: GAPE summary for FY26 to FY30 (tonnes)

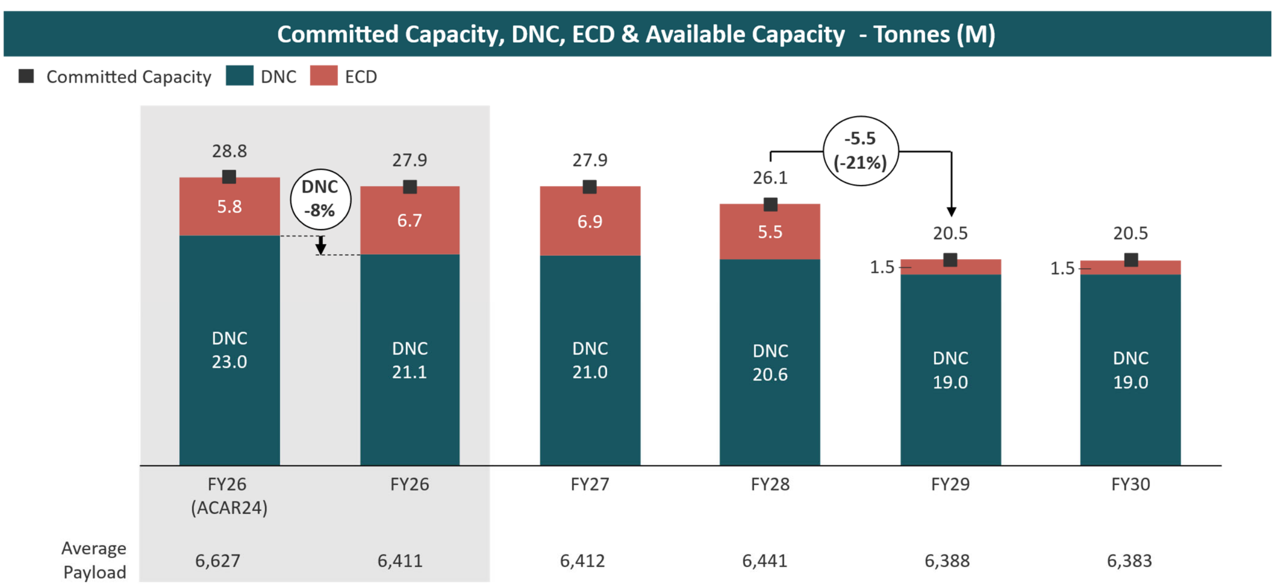
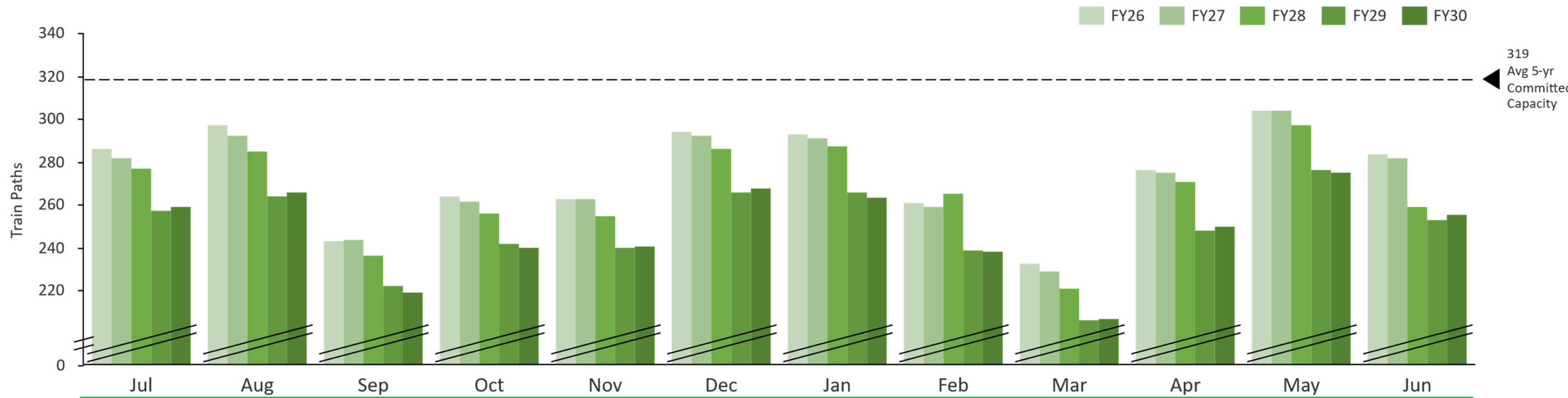


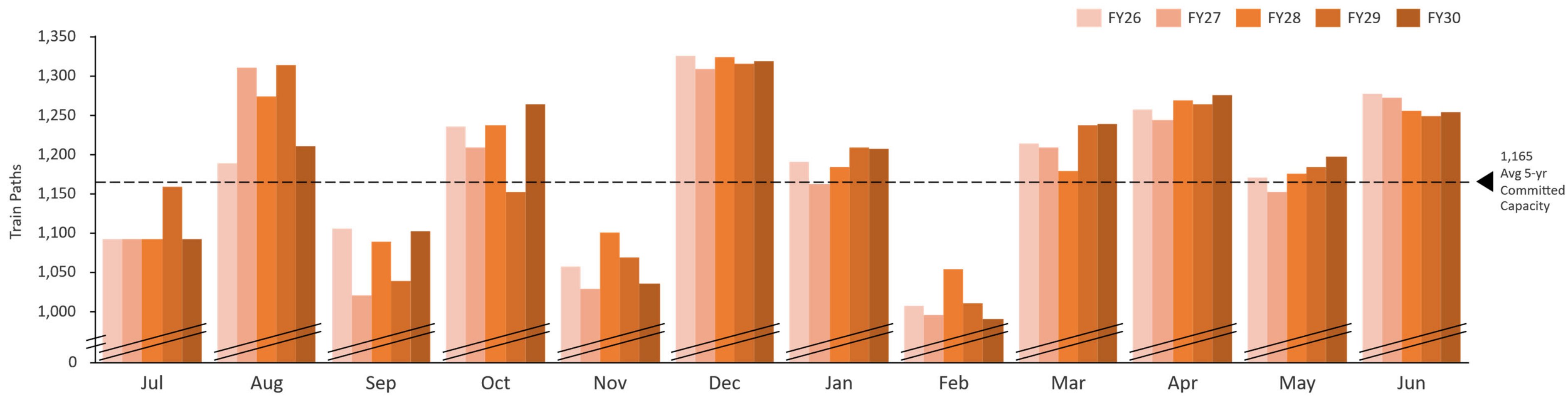
Figure B3: GAPE System DNC per month per year



	Month											
Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY26	286	297	243	264	263	294	293	261	233	277	304	284
FY27	282	292	244	262	263	292	291	259	229	275	304	282
FY28	277	285	236	256	255	286	287	265	221	271	297	259
FY29	257	264	222	242	240	266	266	239	206	248	276	253
FY30	259	266	219	240	241	268	264	238	207	250	275	256

APPENDIX C: Goonyella System Information

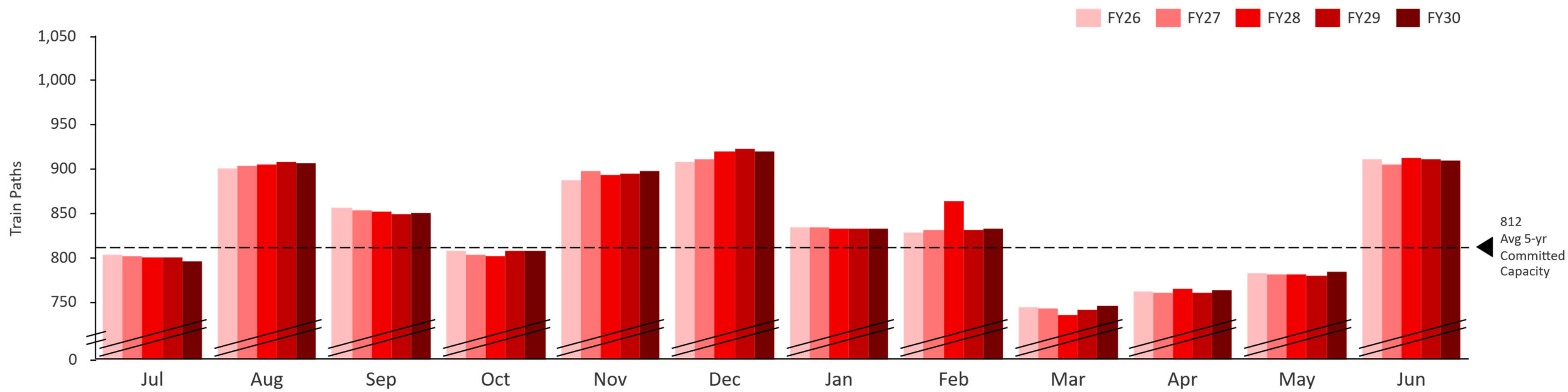
Figure C1: Goonyella System DNC per month per year



	Month											
Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY26	1,091	1,188	1,106	1,235	1,057	1,324	1,190	1,006	1,214	1,257	1,170	1,277
FY27	1,091	1,310	1,020	1,209	1,029	1,308	1,162	995	1,208	1,243	1,151	1,271
FY28	1,091	1,272	1,088	1,237	1,100	1,322	1,183	1,053	1,178	1,267	1,174	1,254
FY29	1,159	1,313	1,038	1,152	1,068	1,314	1,209	1,010	1,236	1,263	1,184	1,247
FY30	1,092	1,209	1,102	1,264	1,035	1,317	1,206	991	1,239	1,275	1,196	1,252

APPENDIX D: Blackwater System Information

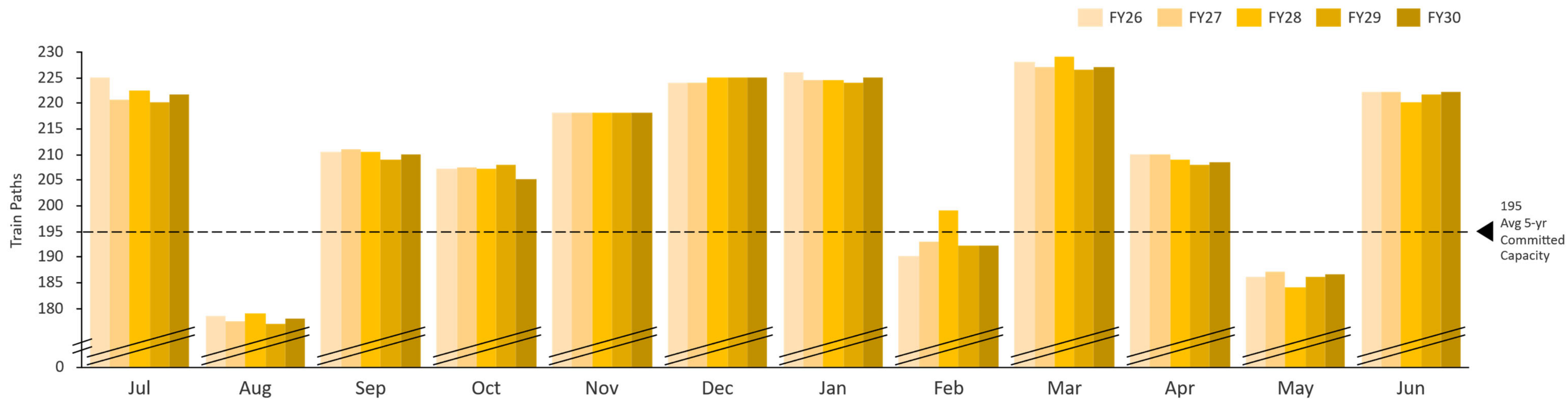
Figure D1: Blackwater System DNC per month per year



	Month											
Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY26	802	900	856	808	888	908	833	829	744	762	782	911
FY27	801	904	853	803	897	910	834	831	743	760	780	904
FY28	799	905	851	801	893	920	832	863	735	765	781	912
FY29	800	907	849	808	894	923	833	830	741	760	779	910
FY30	796	906	850	807	897	920	832	832	745	763	784	909

APPENDIX E: Moura System Information

Figure E1: Moura System DNC per month per year



	Month											
Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY26	225	179	211	207	218	224	226	190	228	210	186	222
FY27	221	178	211	208	218	224	225	193	227	210	187	222
FY28	223	179	211	207	218	225	225	199	229	209	184	220
FY29	220	177	209	208	218	225	224	192	227	208	186	222
FY30	222	178	210	205	218	225	225	192	227	209	187	222