

Hunter Valley Coal Network Access Undertaking  
2018 Compliance Assessment

Submission To

Australian Competition & Consumer Commission

16 June 2021

PUBLIC VERSION

ARTC

An aerial, high-angle photograph of a long, straight railway track stretching from the foreground into the distance. The track is flanked by a wide, dark gravel bed. The surrounding landscape is a flat, open field with sparse, low-lying vegetation. The lighting suggests a low sun, creating long shadows and a warm, golden glow on the ground. The track lines converge towards the horizon, creating a strong sense of perspective.

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## 1. INTRODUCTION & BACKGROUND

This submission to the Australian Competition and Consumer Commission (**ACCC**) relates to compliance by Australian Rail Track Corporation (**ARTC**) with a voluntary access undertaking, the Hunter Valley Coal Network Access Undertaking as varied on 29 June 2017 (**HVAU**), for the period 1 January 2018 to 31 December 2018.

The purpose of this submission is to demonstrate ARTC's compliance with the requirements of HVAU section 4.10 for the period 1 January 2018 to 31 December 2018 (**2018 compliance period**) and to specifically address the information requirements detailed in HVAU Schedule G clause 2.

On the 29 November 2018 a further variation of the HVAU was accepted by the ACCC. The provisions of this latest variation commenced on the 1 January 2019 and are therefore not relevant to the 2018 compliance period.

ARTC has submitted its 2018 Compliance Assessment within 4 months of the ACCC's Final Determination for 2017 as required under HVAU section 4.10(a).

A copy of the HVAU and associated documents can be downloaded from ACCC's website at: <https://www.accc.gov.au/regulated-infrastructure/rail/artc-hunter-valley-access-undertaking>.

Terms used in this submission are as per the HVAU unless otherwise indicated by the context.

### 1.1 Hunter Valley Coal Network Access Undertaking Requirements

The HVAU requires that ARTC submit to the ACCC for each calendar year<sup>1</sup>:

- documentation detailing the roll forward of the regulatory asset base (**RAB**) (with respect to Pricing Zone 3) and the RAB Floor Limit (all Pricing Zones), and comparisons between RAB and RAB Floor Limit with respect to Pricing Zone 3;
- documentation detailing calculations relevant to reconciliation of Access revenue with the applicable Ceiling Limit and any allocation of the total unders and overs amount including in Pricing Zone 3, where RAB is at or below RAB Floor Limit; and
- a copy of the Final Audit Report relating to the True Up Test.

The documentation requirements are set out in detail in HVAU Schedule G. ARTC has also continued to provide the additional documentation previously requested by the ACCC for previous Compliance Assessment submissions as well as additional information relevant to this 2018 submission in Attachment 5.

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<sup>1</sup> *Hunter Valley Coal Network Access Undertaking as varied on 29 June 2017 section 4.10*

## 1.2 Form Of This Submission

In order to ensure compliance with the information requirements set out at HVAU Schedule G, ARTC has sought to prepare this submission broadly in line with the prescribed order at Schedule G clause 2. This submission for the 2018 compliance period generally follows the same format as the submission for the 2017 compliance period.

Table 1 sets out the sections in this submission together with the relevant information requirement under Schedule G.

ARTC has continued to apply the methodology for incremental costs established in the ACCC 2013 Final Determination<sup>2</sup> and the WIK Report<sup>3</sup> which informed that decision, and as approved by the ACCC in its Final Determinations for subsequent Compliance Assessments.

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<sup>2</sup> ACCC, Final Determination Australian Rail Track Corporation's compliance with the Hunter Valley Coal Network Access Undertaking financial model for the 2013 calendar year, 6 June 2016  
<https://www.accc.gov.au/regulated-infrastructure/rail/annual-compliance-assessment-2013/final-determination>

<sup>3</sup> WIK-Consult, Final Report Study for the Australian Competition and Consumer Commission Assessment of the Incremental Costs of Pricing Zone 3 Access Holders' Use of Pricing Zone 1 and 2 of the Australian Rail Track Corporation's Hunter Valley Rail Network, 30 September 2015  
<https://www.accc.gov.au/system/files/WIK-Consult%20T%C3%9CV%20-%20Consultant%20report%20for%202013%20Annual%20Compliance%20%28PUBLIC%29.pdf>

**Table 1: Submission Layout**

Section	Title	Relevant requirement at HVAU Schedule G clause 2
1	Introduction & Background	
2	Operating Costs	
3	RAB Roll Forward <ul style="list-style-type: none"> <li>▪ Component calculation</li> <li>▪ Component values</li> <li>▪ Outcome and closing values</li> <li>▪ Spreadsheet model (confidential)</li> </ul>	2(b)(i) 2(b)(ii) 2(b)(iii) 2(b)(vi)
4	RAB Floor Limit Roll Forward <ul style="list-style-type: none"> <li>▪ Component calculation</li> <li>▪ Component values</li> <li>▪ Outcome and closing values</li> <li>▪ Spreadsheet model (confidential)</li> <li>▪ Pricing Zone 3 RAB/RAB Floor Limit comparison</li> </ul>	2(b)(i) 2(b)(ii) 2(b)(iii) 2(b)(vi) HVAU section 4.10(a)
5	Capital Expenditure <ul style="list-style-type: none"> <li>▪ RCG endorsement</li> </ul>	2(b)(iv)
6	Disposals <ul style="list-style-type: none"> <li>▪ RCG endorsement</li> <li>▪ References</li> <li>▪ Determining current value</li> </ul>	2(b)(v) 2(b)(v) 2(b)(v)
7	Contact Details (stakeholders) <ul style="list-style-type: none"> <li>▪ Industry stakeholders</li> </ul>	2(b)(vii)
8	Ceiling Test <ul style="list-style-type: none"> <li>▪ Access revenue</li> <li>▪ Full Economic Cost by item</li> <li>▪ Total unders &amp; overs amount</li> <li>▪ 2017 comparison</li> <li>▪ Assumptions &amp; methodology</li> <li>▪ Spreadsheet model (confidential)</li> </ul>	2(c)(i)(A) 2(c)(i)(B) 2(c)(i)(C) 2(c)(i)(D) 2(c)(ii) 2(c)(iii)
9	Unders & Overs Allocation <ul style="list-style-type: none"> <li>▪ Assumptions &amp; methodology</li> <li>▪ Unders &amp; overs allocation (confidential)</li> <li>▪ Spreadsheet model (confidential)</li> <li>▪ Access Holder endorsement</li> </ul>	2(c)(ii) 2(c)(i)(C) 2(c)(iii) 2(c)(iv)
10	Pricing Zone 3 Interim Indicative Access Charge	2(d)
11	System wide true up test audit <ul style="list-style-type: none"> <li>▪ Final Audit Report</li> </ul>	2(e)
12	Contact Details (ARTC) ARTC authorised person	2(f)

Note that throughout this submission and supporting attachments, some tables may not add to the totals presented due to the rounding of underlying data.

Table 2 sets out the additional supporting documentation provided to the ACCC with the 2018 submission:

**Table 2: Additional Supporting Documentation**

Split between MPM and RCRM; forecast MPM and RCRM; actual and forecast expenditure for the top 6 maintenance activities	Attachment 5
10 year Asset Management Plan	Attachment 5
Annual Works Program and budget	Attachment 5
Asset strategies for major maintenance activities undertaken	Attachment 5
Approved annual possession program	Attachment 5
Actual and forecast GTK and Train Km for the Hunter Valley (for Pricing Zones and non-coal) and Interstate networks	Attachment 5
Assurance that ARTC's procurement policies were satisfied and procurement efficient	Section 2 and Attachment 5
Changes to ARTC's capitalisation policy	Attachment 2
Asset disposals—underlying calculations which determine the written down value	Section 6 and Attachment 5
Mapping of the Schedule I overhead allocators to operating cost activities and Actual values for Schedule I allocators	Section 2 and Attachment 5



### 1.3 Context for 2018

ARTC has previously provided the ACCC with comprehensive information on the Network, Customer and Supply Chain context for the Hunter Valley and ARTC's lease and rail safety requirements. This contextual information remains relevant for 2018.

ARTC's approach to maintaining and operating the Hunter Valley Network continues to be focussed on the requirement to uphold the safety and reliability of the Network for all rail traffic and meet Customer capacity and availability needs. The major maintenance and sustaining capital works program continued to be delivered based on a six-network closedown strategy and aligned to achieve Coal Chain outcomes. Work delivered in this closedown strategy continues to be predominantly outsourced.

Aggregate coal tonnage volume transported over the network to the port and domestic power generators increased slightly between 2017 and 2018, with the overall coal Gross Tonne Kilometres (**GTK**) for the Network increasing by 1.8%. The trend of a higher proportion of the volume profile originating from the extremities of the Network has remained constant and the cumulative effect continues to influence the maintenance activities undertaken at a zonal level in combination with the individual operational, historical and geotechnical characteristics that are unique to each Pricing Zone.

Thermal coal prices sustained above US\$100 per tonne for most of the year. The bullish market continued to foster customer sentiment and high levels of growth were still being forecast from Pricing Zones 2 and 3 for both expansions to existing mining operations and greenfield developments. The Capacity Fast Track initiative was implemented at the beginning of the year to look at opportunities for additional throughput and maintenance time in the near term, as well as capacity growth options additional to the in progress ANCO project in the medium and longer term. The actions identified through this program of works were reported via an oversight committee of key stakeholders to the wider Rail Capacity Group for endorsement and implementation well into 2019 and beyond.

Work continued within ARTC to build condition monitoring capability. In response to the critical issues experienced in 2017, structures remained a significant area of focus with continued progress to rectify immediate issues through maintenance and mitigate risk through the installation of real time monitoring equipment and the planning of near term replacement of a number of priority structures. This work, although already beginning to bear fruit with no further bridge failures occurring in the period, will continue in recognition of its importance to maintaining the ongoing reliability of the Hunter Valley Network and its role in supporting the supply of coal to the domestic energy market.

ARTC continued its focus on costs, value for money, safety and reliability. The level of transparency provided to the RCG on ARTC's cost performance for both high level maintenance costs and reconciliations of corridor capital expenditure demonstrated in prior years remained constant. The influence of the high volume of large infrastructure projects occurring on Australia's East Coast began to be felt though increased contract labour rates. ARTC kept stakeholders informed on the resulting impact on costs and began to implement longer term strategies to combat the influence of the skills shortage. Reporting and engagement also continued with the RCG on ARTC's safety, operational and reliability performance and initiatives.

ARTC had a strong regulatory focus throughout the year. Significant management focus, time, effort and resources were invested by ARTC firstly, in providing continual response to the ACCC's deep dive into operating costs as part of the HVAU 2015 Annual Compliance process, and in the drafting, review and lodgement of the September 2018 Variation of the HVAU. This variation, which was accepted by the ACCC on 29 November 2018 and effective 1 January 2019, changed a number of provisions in the undertaking, including:

- incorporating path based pricing
- allocating incremental capital costs on the basis of contracted capacity.

In its Final Determination for the 2017 Compliance Assessment submission,<sup>4</sup> the ACCC concluded that ARTC's operating costs were fully incurred on an efficient basis and that ARTC demonstrated the prudence of its capital expenditure. As referenced in prior year submissions, ARTC's costs for 2018 should be considered as an overall suite to maintain and operate the Hunter Valley Coal Network.

ARTC provided the opportunity for Customers, Rail Operators and the ACCC to attend a briefing on the 2018 Compliance Assessment submission on 21 December 2020 ahead of lodging it with the ACCC. This meeting was well attended by these stakeholders.

ARTC welcomes further engagement from the ACCC and industry through this process.

## 2. OPERATING COSTS

Operating costs are either Segment Specific Costs or an allocation of Non-Segment Specific Costs.

The cost allocation principles under the HVAU for the 2018 compliance period require that where possible, Non-Segment Specific Costs should be directly attributed to a Segment, otherwise there is an allocation in line with the cost allocation methodology as prescribed under the HVAU.

### 2.1 Maintenance Costs and Incremental Methodology

The predominance of major periodic maintenance (**MPM**) and routine corrective and reactive maintenance (**RCRM**) costs are directly identifiable with individual Segments and recognised as Segment Specific Costs against the relevant line Segment where the work was undertaken.

Both RCRM and MPM costs are reported for each Segment and split between fixed and incremental based upon an engineering assessment of the extent to which the activity varies in proportion with volume. For this 2018 compliance submission, ARTC has continued to apply the incremental cost methodology set out in the ACCC 2013 Final Determination and the WIK Report which informed that decision and as approved by the ACCC in ARTC's subsequent Compliance Assessment submissions. Where the activity had not been assessed by WIK, ARTC commissioned an independent assessment from engineering consulting firm Bull Head Services.

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<sup>4</sup> ACCC, Final Determination Australian Rail Track Corporation's compliance with the Hunter Valley Coal Network Access Undertaking financial model for the 2017 calendar year published on 25 September 2020

<https://www.accc.gov.au/regulated-infrastructure/rail/annual-compliance-assessment-2017>

The Bull Head Services report was provided as Attachment 4 to ARTC's 2014 compliance assessment submission and is not reproduced here.<sup>5</sup>

Total incremental maintenance costs for each Segment are divided by total GTKs (including non-coal and unconstrained GTKs and including a weighting to account for axle load variations) or Train Kms to derive an incremental unit cost per GTK or Train Km (as determined by the WIK or Bull Head Services reports, as applicable) for each Segment.

## 2.2 Allocation Approach

The HVAU requires that where possible, Non-Segment Specific Costs are to be directly attributed to a Segment, otherwise there is an allocation of the costs to Segments in line with the cost allocation methodology as prescribed under the HVAU.

For 2018, the allocation of Non-Segment Specific Costs that cannot be directly attributed to a Segment is based on the allocation methodology established by the 2017 HVAU Variation and the approved Schedule I (consistent with the second half of 2017).

Similar to the 2017 Compliance Submission, ARTC has provided on a confidential basis a detailed mapping of the operating cost activities to the relevant allocator at Attachment 5 to assist the ACCC in its review.

## 2.3 Procurement Policies

In April 2018 ARTC implemented a new procurement manual and associated procedures company wide. The updated manual documented refreshed guidelines for the engagement of suppliers, established a Procurement Threshold Matrix which set out delegations and approval pathways based on anticipated contract values, and set a renewed standard for articulating and demonstrating value for money throughout the procurement process. In addition to the manual, a suite of process maps and reference guides were developed to assist with the implementation and detailed personnel training was undertaken throughout the year to embed the new processes across the business.

In the 2015 Final Determination, the ACCC referenced an audit conducted by the Australian National Audit Office in 2017.<sup>6</sup> This audit was in relation to a pre-construction phase for Inland Rail and Grant Funding focused, and not specifically related to ARTC's general procurement processes. The implementation of the new procurement manual along with enhancements to ARTC's procurement and contracting processes is the first step in the larger company wide transformation program currently underway in response to these audit findings. Given the scale of procurement activity undertaken across the business, this continuous improvement project continues to be a key area of corporate focus.

Consistent with the approach in the 2017 Compliance Assessment submission, ARTC has provided the ACCC with a confidential outline of the procurement processes applied to a cross

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<sup>5</sup> See ARTC, 2014 Compliance Assessment Submission Attachment 4, <https://www.accc.gov.au/regulated-infrastructure/rail/annual-compliance-assessment-2014/revised-compliance-submission>

<sup>6</sup> Refer page 37 of the ACCC 2015 Final Determination, [https://www.accc.gov.au/system/files/ACCC%20final%20determination%20-%20HVAU%20Annual%20Compliance%202015\\_0.pdf](https://www.accc.gov.au/system/files/ACCC%20final%20determination%20-%20HVAU%20Annual%20Compliance%202015_0.pdf)

section of contracts relating to 2018 costs to demonstrate the efficiency and value for money in ARTC's procurements.

## 2.4 Operating Cost Drivers

The Hunter Valley Network Operating Costs document (Attachment 1) provides an overview of the nature and key drivers for ARTC's operating costs for the Network for the 2018 compliance period. Maintenance costs are provided at a zonal level for the top ten maintenance activities.

ARTC has also provided the ACCC with an update to the confidential spreadsheet utilised with previous submissions that provides a split between MPM and RCRM, forecast MPM and RCRM and the actual and forecast expenditure for the top six maintenance activities.

## 2.5 Engagement with Access Holders

As outlined in section 1.3, Hunter Valley management have continued providing transparency to the RCG on safety, operational and reliability performance of the Network and asset management. Quarterly reporting of ARTC's maintenance cost performance and reconciliations of corridor capital expenditure has also continued. Given the cross section of RCG members (Access Holders, Rail Operators and HVCCC), the RCG remains an appropriate forum to engage with stakeholders on this information.

Given the in arrears nature of the compliance assessments, ARTC provides the following overview of the extent of engagement that was undertaken for 2018 activities which was in addition to the general discussion areas at the RCG:

- ARTC provided presentations to the RCG on the key drivers and budgets for FY19 corridor capital.
- ARTC engaged the RCG on the planned possession program for 2018;
- Cost reports were provided quarterly covering both the corridor capital reconciliation and high level maintenance costs; and
- ARTC also engaged the RCG on its approach to various operational and infrastructure and initiatives relating to the ongoing structures program and asset condition monitoring

These presentations and reports are attached to the submission on a confidential basis.

### 3. RAB ROLL FORWARD

#### 3.1 2018 RAB Roll Forward Calculation

For segments forming part of Pricing Zone 3 in HVAU Schedule E, the RAB is rolled forward annually using the following methodology:

$$\text{RAB}_{t \text{ start}} = \text{RAB}_{t-1 \text{ end}} =$$

$$(1 + \text{RoR}) \times \text{RAB}_{t-1 \text{ start}} - \text{Out-turn Revenue}_{t-1} + \text{Out-turn Opex}_{t-1} + \text{Net Capex}_{t-1} \times (1 + 0.5 \times \text{RoR})$$

where:

RAB <sub>t start</sub> is:	RAB at the start of the relevant calendar year (t) (which, for the first year following the Commencement Date, would be the Initial RAB).
RAB <sub>t-1 end</sub> is:	the RAB at the end of the preceding calendar year (t-1).
RAB <sub>t-1 start</sub> is:	the RAB at the start of the preceding calendar year (t-1).
RoR is	the nominal pre tax Rate of Return.
Out-turn Revenue <sub>t-1</sub> is:	the total Access revenue earned by ARTC in the preceding calendar year (t-1) but will not include: <ul style="list-style-type: none"> <li>(i) a Capital Contribution received from an Applicant or an Access Holder; or</li> <li>(ii) Access revenue returned to a Contributor as a result of the operation of a user funding agreement between the Contributor and ARTC.</li> </ul> <p>The one off adjustment to the Access revenue for Pricing Zone 3 Access Holders in respect of the backdating period 1 July 2016 to 30 June 2017 will be offset against Out-turn Revenue in the relevant calendar year for the purposes of this clause.</p>
Out-turn Opex <sub>t-1</sub> is:	the total operating expenditure incurred by ARTC in the preceding calendar year (t-1), on an Efficient basis, determined in accordance with HVAU sections 4.5(a)(i), (iv) and 4.5(b).
Net Capex <sub>t-1</sub> is:	the net additions to the RAB in the preceding calendar year (t-1), that is out-turn Capital Expenditure by ARTC less the written down value of any disposals during the preceding calendar year (t-1) on a Prudent basis, including interest costs incurred during construction up until 1 July in the calendar year the asset was commissioned, capitalised in the year the asset was commissioned and determined by reference to the relevant form of the Rate of Return (to the extent that Capital Expenditure is incurred on a Prudent basis, including interest costs), but will not include Capital Contributions.

The value for each term in the formula is discussed in section 3.2 below.

### 3.2 2017 RAB Roll Forward Component Values

#### 3.2.1 RAB Start [RAB<sub>t-1 start</sub>]

The RAB start for the 2018 compliance period is equal to the closing value of the 2017 values as determined through the roll forward of asset values approved by the ACCC, with an adjustment to reflect the portion of the one off adjustment that relates to the period 1 January 2017 to 30 June 2017 provided to Pricing Zone 3 Access Holders in respect of the backdating period under the 2017 HVAU Variation.

The 2017 portion of the one off adjustment was confirmed with Pricing Zone 3 Access Holders following the ACCC's Final Determination in respect of the 2017 Compliance Assessment and refunded at the same time the overs for 2017 was refunded to the Constrained Coal Customers.

As per the HVAU, the adjustment has been recorded as an offset against Out-turn Revenue in the relevant calendar year, being 2017, as follows:

**Table 3: 2018 RAB Opening Value**

	\$	File & Cell Reference
2017 closing Pricing Zone 3 RAB per 2017 Final Determination	779,298,363	'[2018SubmissionModel.xlsx]RAB 2018'!\$X36
Add back 2017 rebate one off	3,500,000	'[2018SubmissionModel.xlsx]RAB 2018'!\$X37
<b>2017 adjusted closing Pricing Zone 3 RAB</b>	<b>782,798,363</b>	'[2018SubmissionModel.xlsx]RAB 2018'!\$X38

The opening value for the 2018 RAB is therefore \$782,798,363.

#### 3.2.2 Return

In accordance with HVAU section 4.4(a), a nominal pre-tax rate of return (**RoR**) is applied to the RAB. Under section 4.8 of the HVAU the RoR to be applied for the 2018 compliance period is 7.91%. New assets commissioned during the 2018 compliance period have a deemed commissioning date of 1 July 2018, as contemplated under the HVAU. The RoR has been applied at 50% of 7.91%.

The components of the return value are set out in Table 4.

**Table 4: 2018 RAB Return**

	Formula Element	Return \$	File & Cell Reference
Existing Assets	RoR x RAB <sub>t-1 start</sub>	61,919,351	'[2018SubmissionModel.xlsx]RAB 2018'!\$\$21
Net Capex	Net Capex <sub>t-1</sub> x (1+0.5 x RoR)	593,730	'[2018SubmissionModel.xlsx]RAB 2018'!\$\$24
<b>Total Return</b>		<b>62,513,080</b>	'[2018SubmissionModel.xlsx]RAB 2018'!\$M\$16

### 3.2.3 Revenue [Out-turn Revenue $t-1$ ]

For the 2018 compliance period the Out-turn Revenue in Pricing Zone 3 is \$146,354,587.<sup>7</sup> This value is derived from the total revenue generated by coal traffics using Pricing Zone 3 less the amount required to offset incremental costs in Pricing Zone 1.

### 3.2.4 Operating Expenditure [Out-turn Opex $t-1$ ]

Total operating expenditure in Pricing Zone 3 for the 2018 compliance period was \$61,259,301. This expenditure is made up of the elements shown in Table 5.

**Table 5: 2018 RAB Out-turn Opex  $t-1$**

	\$	File & Cell Reference
Variable Track Maintenance	27,567,234	'[2018SubmissionModel.xlsx]RAB 2018!\$N\$16
Fixed Track Maintenance	14,911,834	'[2018SubmissionModel.xlsx]RAB 2018!\$O\$16
Loss On Disposals	1,518,102	'[2018SubmissionModel.xlsx]RAB 2018!\$Q\$16
Network Control	4,152,236	'[2018SubmissionModel.xlsx]RAB 2018!\$R\$16
Business Unit Management	8,277,337	'[2018SubmissionModel.xlsx]RAB 2018!\$S\$16
Corporate Overheads	4,832,558	'[2018SubmissionModel.xlsx]RAB 2018!\$T\$16
<b>Out-turn Opex <math>t-1</math></b>	<b>61,259,301</b>	'[2018SubmissionModel.xlsx]RAB 2018!\$U\$16

### 3.2.5 Net Capital Expenditure [Net Capex $t-1$ ]

Net Capital Expenditure in Pricing Zone 3 for 2018 amounted to \$15,012,134.

The components of Net Capex  $t-1$  are set out in Table 6. There was Nil interest during construction in Pricing Zone 3 for the 2018 compliance period. Asset value reduction due to disposals for 2018 amounted to \$1,559,047.

**Table 6: 2018 RAB Net Capex  $t-1$**

	\$	File & Cell Reference
Major Projects	-	'[2018SubmissionModel.xlsx]RAB 2018!\$F\$16
Interest During Construction	-	'[2018SubmissionModel.xlsx]RAB 2018!\$G\$16
Corridor Capital	16,571,180	'[2018SubmissionModel.xlsx]RAB 2018!\$H\$16
Disposals (Asset Value Reduction)	(1,559,047)	'[2018SubmissionModel.xlsx]RAB 2018!\$I\$16
<b>Net Capex <math>t-1</math></b>	<b>15,012,134</b>	'[2018SubmissionModel.xlsx]RAB 2018!\$J\$16

Refer to section 5 and Appendix C for details of Major Project and Corridor Capital works commissioned during the 2018 compliance period, and section 6 and Appendix D for details of asset disposals.

<sup>7</sup> '[2018Combined - 20201001.xlsx]RAB 2018!\$M\$77

### 3.3 Outcome & Closing Values

Applying the roll forward formula as prescribed at HVAU section 4.4(a) and the relevant values for the 2018 compliance period, the closing value for the RAB in Pricing Zone 3 (unconstrained network) can be determined as shown in Table 7.

**Table 7: 2018 RAB Roll Forward (Pricing Zone 3)**

	Formula Element	Value (\$)	File & Cell Reference
Opening RAB	$RAB_{t-1 \text{ start}}$	779,298,363	'[2018SubmissionModel.xlsx]RAB 2018'!\$X\$36
Add Back one off adjustment for 2017		3,500,000	'[2018SubmissionModel.xlsx]RAB 2018'!\$\$37
Adjusted Opening RAB		782,798,363	'[2018SubmissionModel.xlsx]RAB 2018'!\$\$38
Additional segments		-	'[2018SubmissionModel.xlsx]RAB 2018'!\$X\$21
Return on RAB Open	$RoR \times RAB_{t-1 \text{ start}}$	61,919,351	'[2018SubmissionModel.xlsx]RAB 2018'!\$X\$22
Less Revenue	$Out\text{-}turn \text{ Revenue}_{t-1}$	(146,354,587)	'[2018SubmissionModel.xlsx]RAB 2018'!\$X\$23
Plus Opex	$Out\text{-}turn \text{ Opex}_{t-1}$	61,259,301	'[2018SubmissionModel.xlsx]RAB 2018'!\$X\$24
Plus Net Capex	$Net \text{ Capex}_{t-1}$	15,012,134	'[2018SubmissionModel.xlsx]RAB 2018'!\$X\$25
Plus Return On Capex	$Net \text{ Capex}_{t-1} \times (1 + 0.5 \times RoR)$	593,730	'[2018SubmissionModel.xlsx]RAB 2018'!\$X\$26
<b>Closing RAB</b>	<b><math>RAB_{t-1 \text{ end}}</math></b>	<b>775,228,292</b>	'[2018SubmissionModel.xlsx]RAB 2018'!\$X\$27

Appendix B presents the opening and closing RAB values for each segment in Pricing Zone 3.

An electronic copy of the spreadsheet underpinning the calculations for the roll forward of the RAB in Pricing Zone 3 is provided to the ACCC on a confidential basis as part of this submission.

It is ARTC's view that the roll forward of the RAB has been calculated in accordance with HVAU section 4.4(a).



## 4. RAB FLOOR LIMIT ROLL FORWARD

### 4.1 Component Calculation

In accordance with HVAU section 4.4(b)(ii), the RAB Floor Limit for a segment or group of segments will be rolled forward annually according to the following methodology:

$$\text{RAB Floor Limit}_{\text{start}} = \text{RAB Floor Limit}_{\text{t-1 end}} = (1 + \text{CPI}_{\text{t-1}}) \times \text{RAB Floor Limit}_{\text{t-1 start}} + \text{Net Capex}_{\text{t-1}} - \text{Depreciation}_{\text{t-1}}$$

where:

RAB Floor Limit <sub>t start</sub> :	the RAB Floor Limit at the start of the relevant calendar year (t) (which, for the first year following the Commencement Date, would be the Initial RAB).
RAB Floor Limit <sub>t-1 end</sub> :	the RAB Floor Limit at the end of the preceding calendar year (t-1).
RAB Floor Limit <sub>t-1 start</sub> :	the RAB Floor Limit at the start of the preceding calendar year (t-1).
CPI <sub>t-1</sub> :	the inflation rate for the preceding calendar year (t-1), determined by reference to the CPI for the September quarter of that year.
Net Capex <sub>t-1</sub> :	the net additions to the RAB Floor Limit in the preceding calendar year (t-1) that is out-turn Capital Expenditure by ARTC less the written down value of any disposals during the preceding calendar year (t-1) on a Prudent basis, including interest cost incurred during construction up until 1 July in the calendar year the asset was commissioned, capitalised in the year the asset was commissioned and determined by reference to the relevant form of the Rate of Return (to the extent that Capital Expenditure is incurred on a Prudent basis, including interest cost), but will not include Capital Contributions.
Depreciation <sub>t-1</sub> :	Depreciation applicable to the RAB Floor Limit in the preceding calendar year (t-1).

### 4.2 Component Values

#### 4.2.1 RAB Floor Limit Opening Value [RAB Floor Limit<sub>t-1 start</sub>]

As prescribed at HVAU section 4.4(a) the RAB Floor Opening Value is equal to the closing RAB Floor Limit approved by the ACCC for the compliance period ending 31 December 2017.

The opening value for the 2018 RAB Floor Limit is summarised in Table 8 on a Pricing Zone basis.

**Table 8: Opening RAB Floor Limit Value 1 January 2018**

	\$	File & Cell Reference
Pricing Zone 1	1,212,689,945	'[2018SubmissionModel.xlsx]FL 2017!\$AF\$65
Pricing Zone 2	224,025,164	'[2018SubmissionModel.xlsx]FL 2017!\$AF\$66
Pricing Zone 3	719,236,740	'[2018SubmissionModel.xlsx]FL 2017!\$AF\$67
<b>Total Network Opening Value</b>	<b>2,155,951,849</b>	'[2018SubmissionModel.xlsx]FL 2017!\$AF\$68

No new segments were added to the Network during the 2018 calendar year.

#### 4.2.2 Consumer Price Index [CPI<sub>t-1</sub>]

In accordance with HVAU section 4.4(b), CPI has been calculated to be 1.9556%. The rate has been determined based on the variation in CPI from September 2017 (All Sydney) of 112.5 and September 2018 (All Sydney) of 114.7.

For the 2018 compliance period CPI has been applied to the RAB Floor Limit Opening Value increasing the RAB Floor Limit by \$42,160,836.<sup>8</sup>

#### 4.2.3 Net Capital Expenditure [Net Capex<sub>t-1</sub>]

Major and minor capital additions for the 2018 compliance period have added a net value (including asset value reduction due to disposals) of \$55,675,118 to the Network RAB Floor Limit. This is summarised in Table 9.

**Table 9: 2018 Network Net Capex**

	\$	File & Cell Reference
<b>Incremental Assets</b>		
Major Projects	99,073	'[2018SubmissionModel.xlsx]FL 2018!\$AD\$88
Interest During Construction	-	'[2018SubmissionModel.xlsx]FL 2018!\$AD\$89
Corridor Capital	17,610,351	'[2018SubmissionModel.xlsx]FL 2018!\$AD\$90
Disposal Value Reduction	(5,431,234)	'[2018SubmissionModel.xlsx]FL 2018!\$AD\$91
<b>Net Incremental Capex<sub>t-1</sub></b>	<b>12,278,190</b>	'[2018SubmissionModel.xlsx]FL 2018!\$AD\$92
<b>Fixed Assets</b>		
Major Projects	30,125	'[2018SubmissionModel.xlsx]FL 2018!\$AE\$88
Interest During Construction	435,425	'[2018SubmissionModel.xlsx]FL 2018!\$AE\$89
Corridor Capital	50,176,293	'[2018SubmissionModel.xlsx]FL 2018!\$AE\$90
Disposal Value Reduction	(7,244,916)	'[2018SubmissionModel.xlsx]FL 2018!\$AE\$91
<b>Net Fixed Capex<sub>t-1</sub></b>	<b>43,396,927</b>	'[2018SubmissionModel.xlsx]FL 2018!\$AE\$92
<b>Total Net Capex<sub>t-1</sub></b>	<b>55,675,118</b>	'[2018SubmissionModel.xlsx]FL 2018!\$AF\$92

Capital additions commissioned during the 2018 compliance period are deemed to have been commissioned at the mid-point of the calendar year (1 July 2018) for the purposes of determining depreciation and return. Interest during construction and return are also determined on this basis.

Refer to section 5 of this document for supporting data and Appendix C for a list of the Major Project and Corridor Capital additions by segment at an aggregated activity level. See confidential Attachment CAP3 to Attachment 2 for Corridor Capital additions at a detailed project level.

A listing of assets disposed of during the 2018 compliance period is provided in Appendix D. Further detail in relation to the determination of the disposals amount is provided in section 6 of submission.

<sup>8</sup> See '[331 DORC Depreciation.xlsx]FL 2018!AR61

#### 4.2.4 Depreciation [Depreciation $t-1$ ]

HVAU section 4.7 provides that depreciation is calculated each year using a straight line methodology with respect to remaining useful life of the assets. As part of the 2017 HVAU Variation, the ACCC determined the useful life to be 23 years commencing 1 July 2016.

Depreciation is charged on the inflation adjusted RAB Floor Limit Opening Value and Net Capital Expenditure incurred during the 2018 compliance period.

Assets included in the Opening RAB Floor Limit value are depreciated using the straight line methodology by applying the remaining mine life applicable at time of commissioning or upon commencement of the HVAU, as appropriate. This applies to both fixed and incremental assets.

Assets commissioned during the 2018 compliance period are deemed to have been commissioned at the midpoint of the year (1 July 2018) for the purposes of determining depreciation and 50% of the applicable depreciation rate for that period has been applied. The remaining economic life for these assets as at 1 July 2018 is 21 years, yielding a depreciation rate of 4.762%.

Depreciation charged is summarised in Table 10.

**Table 10: 2018 Depreciation Summary**

	\$	File & Cell Reference
<b>Incremental Assets</b>		
Existing Assets	40,706,265	'[2018SubmissionModel.xlsx]FL 2018!\$AJ\$81
New Assets During 2018	421,653	'[2018SubmissionModel.xlsx]FL 2018!\$AJ\$82
<b>Incremental Asset Depreciation</b>	<b>41,127,918</b>	'[2018SubmissionModel.xlsx]FL 2018!\$AJ\$83
<b>Fixed Assets</b>		
Existing Assets	60,988,787	'[2018SubmissionModel.xlsx]FL 2018!\$AK\$81
New Assets During 2018	1,205,758	'[2018SubmissionModel.xlsx]FL 2018!\$AK\$82
<b>Fixed Asset Depreciation</b>	<b>62,194,545</b>	'[2018SubmissionModel.xlsx]FL 2018!\$AK\$83
<b>Depreciation <math>t-1</math></b>	<b>103,322,463</b>	'[2018SubmissionModel.xlsx]FL 2018!\$AL\$83

#### 4.3 Outcome & Closing Values

Applying the roll forward formula and the relevant values for the 2018 compliance period, the closing value for the RAB Floor Limit can be determined for the Network and for the Constrained Network. The results are summarised for the Network in Table 11.

**Table 11: 2018 RAB Floor Limit Roll Forward - Network**

	Formula Element	Value (\$)	File & Cell Reference
Opening Value	RAB Floor Limit $t-1$ start	2,155,951,849	'[2018SubmissionModel.xlsx]FL 2018'!\$AR\$80
Additional segments		-	'[2018SubmissionModel.xlsx]FL 2018'!\$AR\$81
CPI	CPI $t-1$	42,160,836	'[2018SubmissionModel.xlsx]FL 2018'!\$AR\$82
Capital Expenditure	Net Capex $t-1$	55,675,118	'[2018SubmissionModel.xlsx]FL 2018'!\$AR\$83
Depreciation	Depreciation $t-1$	(103,322,463)	'[2018SubmissionModel.xlsx]FL 2018'!\$AR\$84
<b>Closing Value</b>		<b>2,150,465,339</b>	'[2018SubmissionModel.xlsx]FL 2018'!\$AR\$85
<b>Average Value</b>		<b>2,153,208,594</b>	'[2018SubmissionModel.xlsx]FL 2018'!\$AR\$88

Appendix B presents the opening, closing and average RAB Floor Limit values for each Network segment for the 2018 compliance period, identifying which segments form the Constrained Network.

An electronic copy of the spreadsheet underpinning the calculations for the roll forward of the RAB Floor Limit is provided to the ACCC on a confidential basis as part of this submission. A summary of the RAB Floor Limit roll forward is shown in Appendix A.

It is ARTC's view that the roll forward of the RAB Floor Limit has been calculated in accordance with the HVAU section 4.4(b).

#### 4.4 Pricing Zone 3 RAB & RAB Floor Limit Comparison

Section 3.3 Table 7 shows a closing RAB value for Pricing Zone 3 assets for the 2018 compliance period. Table 12 shows a closing RAB Floor Limit value for Pricing Zone 3 assets for the same compliance period and the difference between the two.

**Table 12: 2018 Pricing Zone 3 RAB Floor Limit Compared To RAB**

	Formula Element	Value (\$)	File & Cell Reference
<b>RAB Floor Limit</b>			
Opening Value	RAB Floor Limit $t-1$ start	719,236,740	'[2018SubmissionModel.xlsx]FL 2018'!\$AP\$80
Additional segments		-	'[2018SubmissionModel.xlsx]FL 2018'!\$AP\$81
CPI	CPI $t-1$	14,065,074	'[2018SubmissionModel.xlsx]FL 2018'!\$AP\$82
Capital Expenditure	Net Capex $t-1$	15,012,134	'[2018SubmissionModel.xlsx]FL 2018'!\$AP\$83
Depreciation	Depreciation $t-1$	(34,436,686)	'[2018SubmissionModel.xlsx]FL 2018'!\$AP\$84
<b>Closing Value</b>		<b>713,877,261</b>	'[2018SubmissionModel.xlsx]FL 2018'!\$AP\$85
<b>Closing RAB Value</b>	from Table 7	<b>775,228,292</b>	'[2018SubmissionModel.xlsx]RAB 2018'!\$X\$27
Difference	RAB – RAB Floor Limit	<b>61,351,030</b>	'[2018SubmissionModel.xlsx]RAB 2018'!\$X\$32

Table 12 demonstrates that the RAB in Pricing Zone 3 is higher than the RAB Floor Limit. This confirms that Pricing Zone 3 is an unconstrained part of the Network. In accordance with section 4.10(a)(ii) of the HVAU, ARTC is not required to detail calculations relevant to reconciliation of Access revenue with the applicable Ceiling Limit and calculations of any allocation of the total unders and overs amount. The net balance of losses capitalised into the Pricing Zone 3 RAB (i.e. the difference between the RAB and RAB Floor Limit) as at 31 December 2018 is \$61,351,030.

Table 13 shows the components that contribute to the roll-forward of the capitalised loss balance.

**Table 13: 2018 Roll-Forward Of Capitalised Losses**

	\$	File & Cell Reference
<b>Capitalised Loss Opening Balance</b>	<b>60,061,624</b>	[2018SubmissionModel.xlsx]RAB 2018!\$\$S\$36
Add Back one off adjustment for 2017	3,500,000	[2018SubmissionModel.xlsx]RAB 2018!\$\$S\$37
<b>Adjusted Cap Loss Opening Balance</b>	<b>63,561,624</b>	[2018SubmissionModel.xlsx]RAB 2018!\$\$S\$20
Return on Opening RAB	61,919,351	[2018SubmissionModel.xlsx]RAB 2018!\$\$S\$21
Operating Expenditure	61,259,301	[2018SubmissionModel.xlsx]RAB 2018!\$\$S\$22
Depreciation	34,436,686	[2018SubmissionModel.xlsx]RAB 2018!\$\$S\$23
Return On Cap Ex	593,730	[2018SubmissionModel.xlsx]RAB 2018!\$\$S\$24
CPI Open Floor Limit	(14,065,074)	[2018SubmissionModel.xlsx]RAB 2018!\$\$S\$25
Revenue	(146,354,587)	[2018SubmissionModel.xlsx]RAB 2018!\$\$S\$26
<b>Capitalised Loss Closing Balance</b>	<b>61,351,030</b>	[2018SubmissionModel.xlsx]RAB 2018!\$\$S\$27

## 5. CAPITAL EXPENDITURE

### 5.1 Consultation Process

HVAU sections 7 to 11 set out the process and obligations with regard to initiation of, industry consultation on, and funding of Capital Expenditure in relation to the Network. Specifically, these sections provide a framework for industry endorsement of Capital Expenditure through the RCG for inclusion in the asset base. The Capital Consultation document (Attachment 2) describes ARTC's relevant compliance activities, and industry endorsement, with regard to the 2018 compliance period.

Under HVAU section 9.2 ARTC is required to convene and conduct regular monthly meetings of the RCG. The RCG is an industry forum designed to provide Access Holders, prospective Access Holders and other industry stakeholders with relevant input to identify, prioritise and evaluate future network investments and refine the capital works programme.

HVAU section 9.1(e)(ii) provides for the minor capital works (also referred to as Corridor Capital) programme to be considered by the RCG as a group rather than as individual projects. During 2018, ARTC undertook a process with the RCG in relation to the Corridor Capital program, where the program was presented for endorsement, indicative works and costings within that programme were provided, the program was endorsed, and the works delivered.

It is noted that changes at the detailed project level can occur in terms of the scope, priority and timing depending on prevailing circumstances such as identified network conditions and access to the network. During 2018, ARTC kept the RCG informed of the progress of the endorsed Corridor Capital programme. Updates regarding delivery of the Corridor Capital programme were delivered quarterly to the RCG with all variances reported. The consultation documents provided to the RCG in this regard during 2018 form confidential Attachments CAP2.1, CAP2.2, CAP2.3 and CAP2.4 to Attachment 2.

Capital Expenditure on new and existing assets to be included in the RAB and RAB Floor Limit for the 2018 compliance period is set out in Appendix C. This appendix details Major Projects and Corridor Capital expenditure during the 2018 compliance period by segment at an aggregated activity level. Corridor capital expenditure has been further reported at a detailed project level in confidential Attachment CAP3 to Attachment 2.

Evidence of Access Seeker endorsement of Capital Expenditure as required under HVAU Schedule G is provided in confidential Attachment 3.

## 5.2 Interest During Construction

Interest during construction was not incurred for any major projects over the 2018 compliance period. Post commissioning costs incurred during the compliance year included costs associated with land acquisition, noise attenuation and monitoring, and civil and geotechnical post construction monitoring. See Appendix C for further details.

Interest during construction was incurred on the Gowrie Gates corridor capital project during the period. Details of the commissioned cost for this project are summarised in Table 14 and the detailed calculations for the interest accrued during construction are contained in Appendix E.

**Table 14: 2018 Capital Projects Commissioned & Interest During Construction**

Project Code	Project Name	Project Spend \$	Interest \$	Total Cost \$
25311	Gowrie Gates Bridge	9,362,889	435,425	9,798,314

## 6. DISPOSALS

Capital works resulted in asset disposals for the 2018 compliance period amounting to \$12,676,150.

The written down value for an asset being removed from the RAB is based on the underlying regulatory value of the asset, with CPI escalation and accumulated depreciation applied in accordance with the annual roll forward methodology for the RAB Floor Limit under section 4.4 of the HVAU.

The underlying regulatory value of the asset is sourced as follows:

- for assets existing in 2001, with reference to the Booz Allen Hamilton Depreciated Optimised Replacement Cost (DORC) database determined under the New South Wales Rail Access Undertaking (NSWRAU) in 2001 and forming part of the initial RAB value at commencement of the HVAU;

- for assets acquired after 2001 and prior to July 2011, with reference to the roll-forward of assets as approved under the NSWRAU and forming part of the initial RAB at commencement of the HVAU; and
- for assets added during the term of the HVAU and specifically approved by the ACCC, with reference to the approved value and the underlying DORC database (e.g. Booz & Company (PZ3 - Dartbrook to The Gap line) and Evans & Peck (Old PZ4 – Gap to Turrawan) valuations).

The cumulative effect of the CPI escalation and accumulated depreciation from the valuation date to the relevant compliance period is treated as a 'discount factor' and applied to the underlying regulatory value to determine the written down value. The written down value is reflective of the remaining mine life for depreciation of the RAB rather than the useful life of an individual asset.

The RAB written down value is removed from the asset base in the disposal year. ARTC's net loss on disposal is calculated as the written down asset value less any net proceeds or recovery on disposal. It is important to note that as many assets in the Network tend to have a shorter actual life than the economic life of the Network (i.e. remaining mine life), the value written off when an asset is disposed is usually greater than its scrap value.

The net loss on disposal is included as an operating cost in this submission (see section 3.2.4 Table 5) with commentary on the factors influencing the value of the loss on disposals included at Attachment 1.

The items disposed from the RAB during 2018 were predominantly rail, track, weighbridges and bridges. Disposals increased by \$4.5m on prior year, primarily due weighbridge disposal, track strengthening and rerailling activity in Pricing Zones 1 and 2.

On a network level, overall rerailling scope decreased compared to 2017 as the Pricing Zone 3 30TAL rerailling program was largely completed in the prior year. Despite this, overall disposal values for rerailling increased due to higher written down value in the areas of scope that were completed. Higher written down values are reflective of increased frequency of rail replacement required in some locations due to the track geometry, increased volumes and heavier rail traffic which is resulting in higher wear rates. Higher wear rates cause rail to reach condemning limits in a shorter period triggering the need to reraill more frequently. Given the asset is depreciated based on mine life, the shortened effective life is driving higher disposal values in this instance.

The physical scrapped item may not be collected for some time due to safety, operational and logistical reasons (for example, to avoid unnecessary equipment and personnel accessing the rail corridor during possession periods or disrupting operations).

Items such as culverts and track generate concrete or ballast rubble that is non-reusable and has no scrap value.

Disposed rail is typically at or near the end of its useful life or condemning limits, or has a defect which makes it unsuitable for re-use. There are occasions where short sections of scrapped rail might be used for emergency repairs to a broken rail or in sidings or yards in the coal network (generally for maintenance) where the traffic/tonnes are low. A cost is not applied to the rail that is re-used for emergency repairs/maintenance purposes. Materials are generally not re-used for capital projects in the coal network or added back into the RAB. There were no disposed RAB assets re-added to the RAB during the 2018 compliance period.

Re-use of scrapped rail is typically outside of the Hunter Valley coal network in non-30TAL areas. Suitability of the scrapped rail for re-use is not always known at the time of disposal.

Proceeds are generally recovered from the sale of the scrap steel (commonly as part of rerailling or turnout replacement projects) or when land is disposed. For scrapped steel, ARTC records proceeds based on the average arms' length market rate received for the scrap steel in the year the asset is scrapped. Proceeds are deemed to be received in the year of disposal from the RAB regardless of whether the item is actually sold in that period (e.g. even if left in the corridor for operational reasons or retained for use outside of the coal network).<sup>9</sup>

Appendix D provides further detail on disposals and net loss on disposals for the relevant assets by line section and type of asset/activity. That data is summarised by Pricing Zone in Table 15.

An electronic copy of the spreadsheets underpinning the calculations for the written down value and loss on disposal has been provided to the ACCC on a confidential basis.

Note that the nature of the data from which the disposal information is drawn does not always permit a clear attribution of the componentry disposed of between incremental and fixed assets. Where the disposal of Pricing Zone 1 assets commissioned since the introduction of incremental capital relates to assets assessed as having an incremental proportion, the disposal and loss on disposal will be treated as incremental based on the incremental proportion of the linked activity. Where this information is not available or the asset was assessed as fixed, the disposal will be related to fixed assets.

**Table 15: 2018 Asset Disposals & Loss On Disposal**

	WDV Assets Disposed \$	Disposal Proceeds \$	Loss On Disposal \$
Pricing Zone 1	8,847,179	387,710	8,459,468
Pricing Zone 2	2,269,924	216,835	2,053,090
Pricing Zone 3	1,559,047	40,945	1,518,102
<b>Total</b>	<b>12,676,150</b>	<b>645,490</b>	<b>12,030,660</b>

## 7. CONTACT DETAILS – STAKEHOLDERS

HVAU Schedule G, section 2(b)(vii) requires ARTC to provide a list of stakeholders for use by the ACCC on a confidential basis. This list is provided at **Error! Reference source not found.**

The list includes the name, address and contact details (including email address) of stakeholders considered by ARTC to be relevant Applicants and Access Holders and other parties consulted regarding compliance matters. This is to include a contact at CEO/Executive level for the purpose of an ACCC letter and a regular operational contact for email notification.

Where a stakeholder identified by ARTC is not a relevant Applicant or Access Holder, ARTC has indicated their relationship with ARTC and/or their interest in ARTC's compliance.

<sup>9</sup> Consistent with the approved 2014 to 2017 compliance assessments, proceeds for disposals relating to upgrading rail and turnouts to 30TAL in the segments included in the Network through the Gap to Turravan HVAU variation approved on 25 June 2014 are not included as part of the loss on disposal calculations. This was a trade off for a lower DORC valuation which aligned remaining asset life to the timing of the planned replacement and disposal.



## 8. CEILING TEST

### 8.1 Introduction

The Ceiling Test Model (provided to ACCC as part of this submission on a confidential basis) is used to test access revenue for a mine or a combination of mines against the applicable Ceiling Limit to determine the Constrained Network and Constrained Group of Mines as contemplated under the HVAU.

The Ceiling Test Model calculates the amount of access revenue and the economic cost across the segments utilised by the haul or a combination of hauls (Ceiling Limit). This allows for testing different combinations of hauls, including those combinations that could potentially exceed the Ceiling (i.e. where access revenue for that haul or combination of hauls exceeds economic cost for the segments used by that haul or combination of hauls).

The combination of hauls that is closest to, or exceeds the economic cost for the relevant segments is called the Constrained Group of Mines and the segments comprise the Constrained Network. Table 16 summarises the results of the Ceiling Test model for the Constrained Group of Mines. For the 2018 compliance period the Constrained Network is formed by the segments utilised by the combination of hauls between Ulan, Muswellbrook and the Newcastle coal terminals, excluding some small segments of the Network used exclusively by traffics originating from south of Newcastle and a small segment linking the coal network to the interstate network at Maitland. The table also provides a comparison with the revenue and costs associated with the Constrained Group of Mines for the 2017 compliance period.

Table 16: 2018 Calendar Year Constrained Network Ceiling Test

	2017 Calendar Year	2018 Calendar Year	% Variance
<b>GTK</b>	Millions	Millions	
Export	26,652	28,681	
Domestic	1,619	1,729	
<b>Total</b>	28,271	30,410	7.6%
	\$ million	\$ million	
<b>Total Revenue</b>	245.11	226.63	(7.5%)
<b>Operating Costs</b>			
<b>Infrastructure Costs</b>			
Incremental Maintenance	31.99	32.90	
Fixed Maintenance	26.17	29.83	
<b>Total Maintenance Costs</b>	58.16	62.73	7.9%
Expensed Project Costs	-	-	
Net Loss on Disposal	4.66	9.23	
<b>Total Infrastructure</b>	62.82	71.96	14.6%
Network Control	10.43	11.626	11.5%
Business Unit Management	21.71	25.87	19.2%
Corporate Overheads	13.87	17.76	28.0%
<b>Total Operating Cost</b>	108.82	127.21	16.9%
Incremental Asset Depreciation	31.46	33.42	
Fixed Asset Depreciation	26.31	27.59	
Incremental Asset Return	36.90	37.47	
Fixed Asset Return	30.95	30.97	
<b>Full Economic Costs</b>	234.44	256.66	9.5%
Over/(Under)	10.66	(30.03)	
Average Incremental Asset Base	869	883	
Average Fixed Asset Base	575	550	
Average Total Asset Base	1,444	1,433	

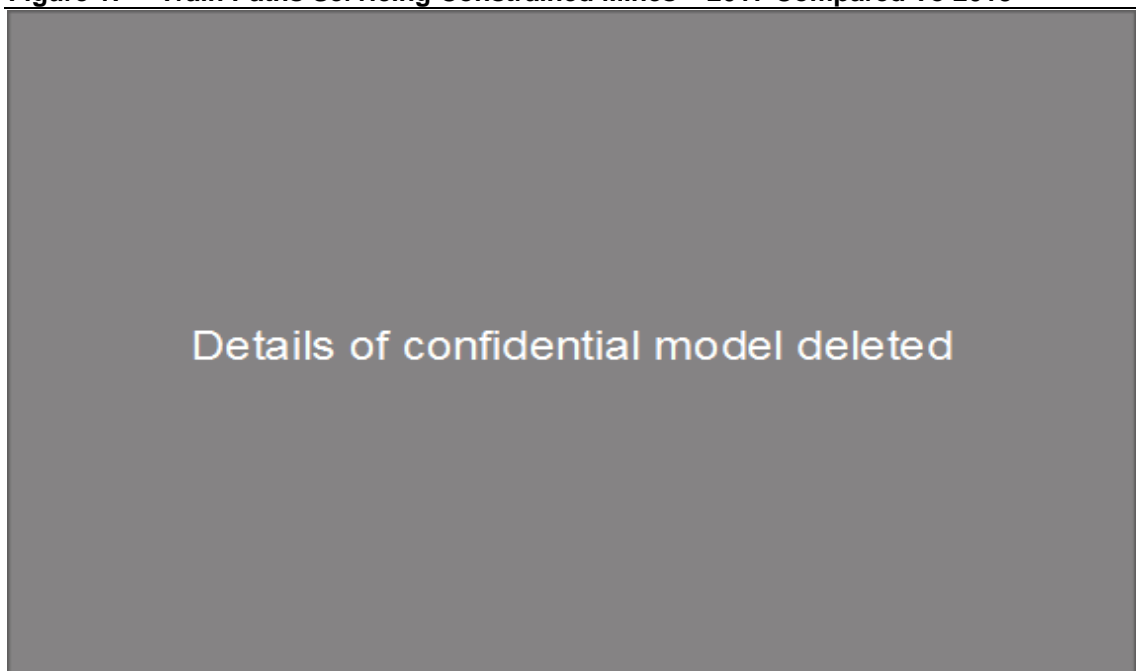
## 8.2 Traffic Volumes & Access Revenue

### 8.2.1 Traffic Volumes

Constrained Coal volume for the 2018 compliance period was 139.0 million tonnes (mt), comprising 129.3mt of export coal and 9.7mt of domestic coal. This is consistent with the 2017 compliance period of 138.3mt overall, but with a 2.7mt increase in export volumes shifted from domestic coal. GTKs from the Constrained Group of Mines for the 2018 compliance period increased by 7.6% to 30.4 billion.

The number of paths utilised by Constrained Coal Customers between 2017 and 2018 can be seen in Figure 1.

**Figure 1: Train Paths Servicing Constrained Mines – 2017 Compared To 2018**



### 8.2.2 Access Revenue

HVAU section 4.3(b) requires that the Access revenue from any Access Holder or group of Access Holders must not exceed the economic cost of those segments, on a stand-alone basis, identified as forming part of Pricing Zone 1 and 2 in HVAU Schedule E required to provide access for the group. This is defined in the HVAU as the Ceiling Limit.

In relation to Pricing Zone 3, HVAU section 4.3(c) requires that access revenue from any Access Holder or group of Access Holders must not exceed the Ceiling Limit where the RAB for the relevant segments is equal to or falls below the RAB Floor Limit for those segments at the end of the calendar year ( $t-1$ ). As shown in Table 12, for the 2018 compliance period, the RAB is above the RAB Floor Limit for the segments comprising Pricing Zone 3. Therefore, the Ceiling Limit does not apply to Pricing Zone 3 traffic for the 2018 compliance period.

During the 2018 compliance period, access revenue in relation to coal traffic was collected from Access Holders under Access Holder Agreements. The total access revenue received from each Access Holder within the Hunter Valley Network was obtained from ARTC's billing systems. Access revenue collected for the 2018 compliance period from the Constrained Coal Customers amounted to \$226,630,814 and was used as the basis for determining allocations of the total unders and overs amount to Constrained Coal Customer Accounts.

### 8.2.3 Access Pricing

As required under HVAU section 4.20(d), ARTC is required to advise Access Holders of indicative access prices by the end of October in the preceding year. In practice, ARTC advises all pricing information to Access Holders at this time, recognising that there is a period for Access Holders to raise a dispute during November before prices are finalised. For the 2018 compliance period, no prices were disputed.

Take Or Pay (TOP) prices for the 2018 compliance period were based on contracted volumes of 154.4mt for export coal and 8.8mt for domestic coal for the Constrained Group of Mines. TOP charges accounted for approximately 60% of access charges and total TOP revenue derived from the Constrained Coal Customers was largely aligned with the forecasted TOP.

Non-TOP prices were based on a forecast volume for the Constrained Group of Mines of 158.7mt (148.9mt for export coal and 9.8mt for domestic coal). The forecasts were obtained directly from coal producers and adjusted by ARTC where the profile received was above contract and exceeded the network capacity and likely ability to rail the projected volume. Actual constrained export volumes for 2018 were below forecast at 139.0mt (129.3mt export and 9.7mt domestic). Since Non-TOP charge accounted for the remaining 40% of Constrained revenue the lower actual volumes have resulted in 6% reduction in revenue than was forecasted at the time of Pricing, accounting for almost half (\$13.7m) of the overall \$30.0m under recovery for the 2018 compliance period.

The other large contributor to the under recovery position was loss on disposals. At the time of setting prices, assumptions used to price loss on disposal estimates were based on historical calculations which did not reference the actual network location and commissioning of assets during the calendar year. The differential between forecasted and actual loss on disposal expense has contributed \$7.2mil (24%) to the total under recovery.

From a cost perspective, infrastructure maintenance expenditure, particularly Routine Corrective and Reactive Maintenance (RCRM) was heavily influenced by the heating contract labour market during the period. Increased demand for specialist resources especially in the civil and signalling disciplines resulted in higher contract labour prices than what was forecasted at the time of pricing. This impact was also compounded by ARTC's need for additional contract labour to meet on call requirements due to Protected Industrial Action at the Hunter Valley Provisioning centres during the year. The higher than forecasted spend in infrastructure maintenance accounts for \$4.7m (16%) of the overall under recovery for the year.

### 8.2.4 Full Economic Cost

The combination of hauls that is closest to or exceeds the economic cost for the relevant segments is called the Constrained Group of Mines and the segments comprise the Constrained Network. Table 16 summarises the results of the Ceiling Test model for the Constrained Group of Mines. For the 2018 compliance period the Constrained Network is formed by the segments utilised by the combination of hauls between Ulan, Muswellbrook and the Newcastle coal terminals, excluding some small segments of the Network used exclusively by traffics originating from south of Newcastle and a small segment linking the coal network to the interstate network at Maitland. The table also provides a comparison with the revenue and costs associated with the Constrained Group of Mines for the 2017 compliance period.

Table 16 above sets out the full Economic Cost with a breakdown into the standard operating cost line items, return and depreciation.

Section 2 and Attachment 1 to this submission set out further details on the operating cost categories and explanations of the drivers for movements in costs between 2017 and 2018.

The maintenance costs for the Constrained Group of Mines comprise:

- All fixed maintenance costs for each segment forming part of the Constrained Network are included in the Ceiling Limit in accordance with the HVAU; and
- The share of incremental maintenance costs for the Constrained Group of Mines (based on the incremental unit cost per GTK or Train Km multiplied by the GTK or Train KM (as applicable) for the Constrained Group of Mines).

Expenditure on infrastructure maintenance in 2018 compared to the values for 2017 for the Constrained Group of Mines is set out in Table 17.

**Table 17: Constrained Group of Mines Maintenance Costs**

	2017 (\$'000)	2018 (\$'000)	% Difference
Incremental	31,993	32,897	2.8%
Fixed	26,167	29,829	14.0%
<b>Total</b>	58,160	62,726	7.9%

Total maintenance costs for the Constrained Group of Mines increased in 2018. Fixed maintenance includes costs associated with incidents on the network as well as the portion of maintenance activities which do not vary with volume based on the relevant engineering assessments. The key drivers for the increase in fixed maintenance were incident costs for turnout and points crossing defects in Pricing Zone 1 and major steel underbridge repair works undertaken on the Glennies Creek Bridge to maintain the safety of the structure.

Consistent with prior year and the HVAU variation approved on 29 November 2018, Network Control, Business Unit Management, Corporate Overheads, Loss on Disposals and Expensed Projects are considered fixed operating costs. The amounts attributed to the Constrained Group

of Mines for each of these cost categories represents the amounts allocated to Pricing Zone 1 and Pricing Zone 2.

### 8.3 Unit Costs

A separate confidential analysis of unit costs has been provided to the ACCC in support of this submission.

## 9. UNDERS & OVERS ACCOUNTING

### 9.1 2018 Compliance Period Unders & Overs Balance

The unders and overs amount for the 2018 compliance period is determined by comparing the access revenue earned by ARTC from the Constrained Group of Mines to the economic cost of the Constrained Network, including the operating costs described in section 8 of this submission, depreciation and the real rate of return of 5.38% applied to the average RAB Floor Limit for the 2018 compliance period, as detailed in section 4.

As highlighted at 8.2.3 Access Pricing, lower than forecasted actual volumes resulted in lower than anticipated revenue levels, while increased costs resulted in a higher Ceiling of \$256.7m compared to the forecast used for pricing. The combination of these factors has resulted in an under-recovery of revenue for the compliance period of \$30.0m.

The difference between access revenue received from the Constrained Group of Mines and the Ceiling Limit results in a total unders and overs amount of \$30,029,466 for the 2018 compliance period as contemplated at HVAU section 4.9, as shown in Table 18 below.

**Table 18: Unders & Overs Account Balance**

	2017 (\$m)	2018 (\$m)
Opening Value	39.88	10.66
Refund (2016 compliance period)	(39.88)	-
Refund (2017 compliance period)	-	(10.66)
Yearly Adjustment	10.66	(30.03)
<b>Closing Value</b>	<b>10.66</b>	<b>(30.03)</b>

The \$10.66m opening value relating to the 2017 compliance period was returned to Access Holders in October 2020 following the ACCC's Final Determination on the 2017 compliance assessment.

It is ARTC's view that the Ceiling Test and determination of the unders and overs amount has been carried out on an Efficient cost basis, and in accordance with HVAU section 4.

## 9.2 Operation Of The Unders & Overs Account

As part of this submission ARTC has provided a spreadsheet to the ACCC on a confidential basis that sets out the allocation of the total unders and overs amount for the 2018 compliance period to Constrained Coal Customers in accordance with the requirements set out in HVAU section 4.9(b)(iii).

## 10. PRICING ZONE 3 – INDICATIVE ACCESS CHARGES

In accordance with HVAU Schedule G section 2(d), and as the RAB for Pricing Zone 3 is greater than the RAB Floor Limit for Pricing Zone 3, ARTC is required to provide Indicative Access Charges for Pricing Zone 3 applicable during the 2018 compliance period, and for the previous calendar year. ARTC has provided Initial Indicative Access Charges for Pricing Zone 3 applicable over the 2018 compliance period in Table 19, and over the 2017 compliance period in Table 20.

**Table 19: 2018 Pricing Zone 3 Initial Indicative Access Charges**

	Non-TOP \$/kgtkm	TOP \$/kgtkm	
Initial Indicative Service 1	2.287	11.794	25 tonne maximum axle load 80kph maximum speed (loaded) 80kph maximum speed (empty) 82 wagon train length 1350 metres maximum train length section run times as per applicable Hunter Valley standard working timetable
Interim Service 1	2.305	12.485	25 tonne maximum axle load 80kph maximum speed (loaded) 80kph maximum speed (empty) 72 wagon train length section run times as per applicable Hunter Valley standard working timetable
Initial Indicative Service 1	2.374	11.298	30 tonne maximum axle load 60kph maximum speed (loaded) 80kph maximum speed (empty) 82 wagon train length section run times as per applicable Hunter Valley standard working timetable

**Table 20: a) 2017 H1 Pricing Zone 3 Initial Indicative Access Charges**

	Non-TOP \$/kgtkm	TOP \$/kgtkm	
Initial Indicative Service 1	2.541	13.136	25 tonne maximum axle load 80 kph maximum speed (loaded) 80 kph maximum speed (empty) 82 wagon train length Section run times as per applicable standard working timetable

**b) 2017 H2 Pricing Zone 3 Initial Indicative Access Charges**

	Non-TOP \$/kgtkm	TOP \$/kgtkm	
Initial Indicative Service 1	2.690	10.336	25 tonne maximum axle load 80 kph maximum speed (loaded) 80 kph maximum speed (empty) 82 wagon train length Section run times as per applicable standard working timetable



## 11. SYSTEM WIDE TRUE UP TEST AUDIT

ARTC changed the identity of the True Up Test auditor for the 2018 True Up Test Audit. In accordance with HVAU section 4.10(f), ARTC has engaged RSM Australia (RSM) as auditor for the Annual True Up Test Audit required to be conducted under that section.

RSM has prepared the Final Audit Report and their findings are noted below.

A True Up Test (TUT) was conducted for each month and quarter (as applicable) during the 2018 compliance period.

A copy of the Final Audit Report has been provided at Attachment 4 to this submission.

The Final Audit Report concludes that ARTC has complied, in all material respects, with Schedule 2 of the Access Holder Agreements under the HVAU for the year ended 31 December 2018.

The Final Audit Report includes details of non-material issues that ARTC has sought to address as noted in Table 21. ARTC is not proposing to re-publish updated results of the TUT to account for any issues that have been deemed non-material.

**Table 21: Audit Findings & ARTC Response**

2018 Audit Findings	ARTC Management Response
The monthly TUT reports for January, July and August 2018 were not published on ARTC’s website within three weeks of the end of the TUT period.	Noted.
Maintenance allocation was incorrectly reported for the March and November 2018 TUT reports. The March 2018 maintenance requirements were overstated by 28 for PZ3 and the monthly and quarterly TUT report for March was not republished. The November 2018 maintenance requirements in PZ1 were understated by 69 and PZ2 were overstated 8. The monthly TUT report for November was republished.	Noted. The errors did not result in any system availability shortfalls. March and November Monthly and Quarterly TUT reports have been republished. ARTC will establish a second check process for data that is aggregated into the TUT. Furthermore, spreadsheets used to calculate inputs for the TUT will be upgraded, improved and controlled.
Non-coal trains were incorrectly reported for the November and December 2018 TUT reports due to an administrative error. The November 2018 non-coal trains were overstated by 91 for PZ1, by 10 for PZ2 and by 3 for PZ3. The December 2018 non-coal trains were overstated by 37 for PZ1 and by 6 for PZ2 and the quarterly December TUT report for PZ2 were overstated by 16. The monthly and quarterly December TUT reports were not republished.	Noted. The errors did not result in any system availability shortfalls. November and December Monthly and Quarterly TUT reports have been republished. ARTC will establish a second check process for data that is aggregated into the TUT. Furthermore, spreadsheets used to calculate inputs for the TUT will be upgraded, improved and controlled.

## **12. CONTACT DETAILS (ARTC)**

In relation to this compliance submission, in accordance with HVAU Schedule G, section 2(f), further information in relation to this submission can be arranged through:

Monica Eil  
Manager Commercial  
Hunter Valley Division  
Telephone: 02 4952 0261  
Email: [customercontracts@ARTC.com.au](mailto:customercontracts@ARTC.com.au)

## APPENDIX A 2018 RAB FLOOR LIMIT ROLL FORWARD SUMMARY

	Total Network	Constrained Network
CPI	1.96%	1.96%
Depreciation Assets Rolled Over 1 July 2016	4.35%	4.35%
Depreciation 2016H2 New Assets	4.40%	4.40%
Depreciation 2017 New Assets (Full Year Rate)	4.55%	4.55%
Depreciation 2018 New Assets	4.76%	4.76%
<b>Opening Total RAB Floor Limit 1/01/2018</b>	<b>2,155,951,849</b>	<b>1,433,084,861</b>
Existing Assets As At 1 July 2016		
Opening Balance	2,192,054,403	1,471,235,505
CPI	42,866,842	28,770,828
Original Balance plus CPI	2,234,921,244	1,500,006,332
Less Disposals	(12,676,150)	(11,117,103)
<b>Adjusted Net Balance</b>	<b>2,222,245,094</b>	<b>1,488,889,229</b>
<b>Depreciation:</b>		
% of year	100.00%	100.00%
Depreciation Current Year	(96,619,352)	(64,734,314)
CPI On Prior Year Depreciation	(2,799,123)	(1,878,640)
Accumulated Depreciation	(242,555,467)	(162,679,748)
<b>Closing Balance</b>	<b>1,979,689,627</b>	<b>1,326,209,481</b>
<b>New Assets 1 July 2016 To 31 December 2016</b>		
Opening Balance	62,195,876	38,679,386
CPI	1,216,275	756,397
Original Balance plus CPI	63,412,151	39,435,783
Less Disposals	-	-
<b>Adjusted Net Balance</b>	<b>63,412,151</b>	<b>39,435,783</b>
<b>Depreciation:</b>		
% of year	100.00%	100.00%
Depreciation Current Year	(2,787,347)	(1,733,441)
CPI On Prior Year Depreciation	(66,828)	(41,560)
Accumulated Depreciation	(6,271,531)	(3,900,242)
<b>Closing Balance</b>	<b>57,140,620</b>	<b>35,535,541</b>

	Total Network	Constrained Network
<b>New Assets 1 January 2017 To 31 December 2017</b>		
Major Projects	49,378,149	21,858,797
CPI	965,617	427,461
Corridor Capital		
Total New Assets 2017	50,343,766	22,286,258
Less Disposals		
<b>Adjusted Net Balance</b>	<b>50,343,766</b>	<b>22,286,258</b>
<b>Depreciation:</b>		
% of year	100.00%	100.00%
Depreciation Current Year	(2,288,353)	(1,013,012)
Accumulated Depreciation on 2017 Assets	(1,122,231)	(496,791)
CPI On Prior Year Depreciation	(21,946)	(9,715)
Accumulated Depreciation	(3,432,529)	(1,519,518)
<b>Closing Balance</b>	<b>46,911,236</b>	<b>20,766,740</b>
<b>New Assets 1 January 2018 To 31 December 2018</b>		
Major Projects	129,199	129,199
Interest During Construction	435,425	435,425
Corridor Capital	67,786,644	51,215,463
Total New Assets 2018	68,351,268	51,780,087
Less Disposals		
Adjusted Net Balance	68,351,268	51,780,087
<b>Depreciation:</b>		
<b>% of year</b>	<b>50.00%</b>	<b>50.00%</b>
Depreciation Current Year	(1,627,411)	(1,232,859)
Accumulated Depreciation on 2017 Assets	(1,627,411)	(1,232,859)
CPI On Prior Year Depreciation		
Accumulated Depreciation	(1,627,411)	(1,232,859)
<b>Closing Balance</b>	<b>66,723,856</b>	<b>50,547,228</b>
<b>Total Closing RAB Floor Limit</b>	<b>2,150,465,339</b>	<b>1,433,058,990</b>
<b>Average RAB Floor Limit</b>	<b>2,153,208,594</b>	<b>1,433,071,926</b>
Current Year Depreciation (Excl. CPI On Prior Year Depreciation)	(103,322,463)	(68,713,626)
Net CPI Increase (Incl. CPI On Prior Year Depreciation)	42,160,836	28,024,771

**APPENDIX B 2018 RAB FLOOR LIMIT & RAB VALUES BY SEGMENT****Table B1: 2018 RAB Floor Limit Values By Segment**

Schedule E Code	Description	Const	Opening RAB FL Value (\$)	Closing RAB FL Value (\$)	Average RAB FL Value (\$)
968	Turrawan To Boggabri Jct	No	66,965,275	65,307,015	66,136,145
967	Boggabri Jct To Gunnedah Jct	No	114,862,787	113,923,212	114,393,000
988	Gunnedah Jct To Watermark	No	130,732,806	127,089,854	128,911,330
966	Watermark To Gap	No	84,342,091	87,199,792	85,770,942
965	Gap To Werris Creek	No	10,128,583	9,846,343	9,987,463
964	Werris Creek To Murulla	No	193,461,425	194,568,491	194,014,958
963	Murulla To Dartbrook Jct	No	98,188,150	95,610,723	96,899,436
962	Dartbrook Jct To Muswellbrook	No	20,555,624	20,331,832	20,443,728
974	Ulan Colliery Jct To Wilpinjong	Yes	11,597,358	11,274,190	11,435,774
973	Wilpinjong To Sandy Hollow	Yes	159,055,463	157,574,326	158,314,894
972	Sandy Hollow To Anvil Hill	Yes	36,545,689	36,902,688	36,724,188
971	Anvil Hill To Bengalla Jct	Yes	16,826,654	16,364,582	16,595,618
970	Bengalla Jct To Muswellbrook	Yes	22,772,161	22,299,923	22,536,042
961	Muswellbrook To Draytons Jct	Yes	83,468,962	82,178,013	82,823,487
958	Draytons Jct To Newdell Jct	Yes	63,675,322	62,409,733	63,042,527
959	Newdell Branch	Yes	3,605,424	3,504,957	3,555,190
957	Newdell Jct To Glennies Ck	Yes	13,029,676	12,666,596	12,848,136
956	Glennies Ck To Camberwell Jct	Yes	45,369,795	44,119,410	44,744,603
955	Camberwell Jct To Whittingham	Yes	65,073,545	72,838,953	68,956,249
952	Mount Thorley To Saxonvale Jct	Yes	1,965,070	1,910,312	1,937,691
951	Saxonvale Jct To Whittingham	Yes	5,517,551	6,331,077	5,924,314
948	Whittingham To Branxton	Yes	225,870,549	221,787,855	223,829,202
944	Telarah To Farley	No	918,266	892,678	905,472
947	Branxton To Farley	Yes	307,531,131	304,924,411	306,227,771
946	Farley To Maitland	Yes	16,220,783	16,824,647	16,522,715
937	Maitland To Thornton (Coal Line)	Yes	45,530,743	49,208,087	47,369,415
936	Thornton To Sandgate (Coal Line)	Yes	207,147,125	205,873,079	206,510,102
931	Sandgate To Kooragang East Jct	Yes	1,287,996	1,763,373	1,525,684
929	Kooragang East Jct To NCIG	Yes	1,303,866	1,267,533	1,285,700
930	NCIG To Kooragang Island	Yes	79,404,584	79,239,271	79,321,928
926	Sandgate To Hanbury Jct (Coal Line)	Yes	2,457,642	2,389,158	2,423,400
925	Hanbury Jct To Waratah (Coal Line)	Yes	3,409,304	3,314,302	3,361,803
917	Waratah To Scholey St Jct (Coal Line)	Yes	2,896,543	3,693,835	3,295,189
916	Scholey St Jct To Port Waratah	Yes	11,521,928	12,398,682	11,960,305
927	Hanbury Jct To Kooragang East Jct	No	1,358,317	1,320,466	1,339,391
915	Islington Jct To Scholey St Jct	No	1,353,665	1,315,944	1,334,804
	<b>Total Network</b>		<b>2,155,951,849</b>	<b>2,150,465,339</b>	<b>2,153,208,594</b>
	<b>Constrained</b>		<b>1,433,084,861</b>	<b>1,433,058,990</b>	<b>1,433,071,926</b>

**Table B2: 2018 RAB Values By Segment**

Schedule E Code	Description	Constrained	Opening RAB Value \$	Closing RAB Value \$
968	Turrawan To Boggabri Jct	No	70,047,015	68,328,067
967	Boggabri Jct To Gunnedah Jct	No	120,252,421	119,013,051
988	Gunnedah Jct To Watermark	No	137,121,965	133,383,110
966	Watermark To Gap	No	89,272,651	92,132,704
965	Gap To Werris Creek	No	10,902,614	10,595,175
964	Werris Creek To Murulla	No	221,215,685	221,163,884
963	Murulla To Dartbrook Jct	No	109,454,149	106,450,491
962	Dartbrook Jct To Muswellbrook	No	24,531,864	24,161,810
	<b>Total</b>		<b>782,798,363</b>	<b>775,228,292</b>

## APPENDIX C 2018 CAPITAL EXPENDITURE INCLUDED IN ASSET BASE

Table C1: 2018 Major Projects

Segment	Segment Description	Constrained ?	Project Number	Project Description	Date of RCG Endorsement	Incremental % & Allocator	Included In 2018 Asset Base \$	IDC \$	Total \$
<b>Pricing Zone 1</b>									
930	NCIG To Kooragang Island	Yes	8667	Kooragang Arrival Roads Stage 2 Phase 6	RCG 29-1-15 RCG 13-8-15	50% GTK	60,251	-	60,251
936	Thornton To Sandgate (Coal Line)	Yes	6387	Hexham Relief Roads Stage 1 - Phase 6	RCG 29-15-14	100% GTK	25,499	-	25,499
947	Branxton To Farley	Yes	5255	Maitland to Minimbah Third Road (Farley to Branxton)	RCG 7-4-11 2010-11	100% GTK	30,415	-	30,415
948	Whittingham To Branxton	Yes	5255	Maitland to Minimbah Third Road (Branxton to Whittingham)	RCG 7-4-11 2010-11	100% GTK	13,035	-	13,035
<b>Sub-Total</b>							<b>129,199</b>	<b>-</b>	<b>129,199</b>
<b>Pricing Zone 2</b>									
	Nil						-	-	-
<b>Sub-Total</b>							<b>-</b>	<b>-</b>	<b>-</b>
<b>Pricing Zone 3</b>									
	Nil						-	-	-
<b>Sub-Total</b>							<b>-</b>	<b>-</b>	<b>-</b>
<b>Total</b>							<b>129,199</b>	<b>-</b>	<b>129,199</b>

**Table C2: 2018 Corridor Capital**

Segment	Segment Description	Constrained	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included in 2018 Asset Base
916	Scholey St Jct To Port Waratah	Yes	186	0916U7	RCG 25-3-15 2015-16 Internal Variation 2018-19	Turnout Renewal	75% GTK	1,145,172
916	Scholey St Jct To Port Waratah	Yes	223	0916AQ	RCG 11-5-17 2017-2018	Resleepering	75% GTK	(25,938)
916	Scholey St Jct To Port Waratah	Yes	759	0916AU	RCG 11-5-17 2017-2018	Point Machine Replacement	50% Train KM	144,291
916	Scholey St Jct To Port Waratah	Yes	816	0916AV	RCG 11-5-17 2017-2018	Signal / Level Crossing Lamp Upgrading	0%	267,368
				0916AW	RCG 11-5-17 2017-2018			
				0916AX	RCG 11-5-17 2017-2018			
				0916AY	RCG 11-5-17 2017-2018			
				0916AZ	RCG 11-5-17 2017-2018			
				0916BA	RCG 11-5-17 2017-2018			
0916BB	RCG 11-5-17 2017-2018							
917	Waratah To Scholey St Jct (Coal Line)	Yes	158	0917N9	RCG 6-5-16 2016-17	Rail Lube Overhaul / Major Maintenance	50% GTK	7,327
917	Waratah To Scholey St Jct (Coal Line)	Yes	186	0917L6	RCG 25-3-15 2015-16 Internal Variation 2017-18	Turnout Renewal	75% GTK	960,190
930	NCIG To Kooragang Island	Yes	178	0930ES	RCG 11-5-17 2017-2018	Rerailing	90% GTK	(140)
930	NCIG To Kooragang Island	Yes	330	0930EI	RCG 6-5-16 2016-17 RCG 22-6-18 2017-18	Wayside Detection Systems - New Install	0%	2,194,829
				0930FD	RCG 6-5-16 2016-17 RCG 22-6-18 2017-18			
931	Sandgate To Kooragang East Jct	Yes	178	0931T3	RCG 9-10-17 2017-18	Rerailing	90% GTK	804,829
931	Sandgate To Kooragang East Jct	Yes	815	0931S9	RCG 11-5-17 2017-2018	Power Supply Upgrade	0%	311,735
				0931T1	RCG 11-5-17 2017-2018			
936	Thornton To Sandgate (Coal Line)	Yes	178	0936HJ	RCG 30-4-18 2018-2019	Rerailing	90% GTK	252,475
936	Thornton To Sandgate (Coal Line)	Yes	229	0936GR	RCG 11-5-17 2017-2018	Track Strengthening / Upgrading	75% GTK	5,230,745
				0936HK	RCG 30-4-18 2018-2019			
				0936HL	RCG 30-4-18 2018-2019			
				0936P7	RCG 6-12-12 2013-14; RCG 25-3-15 2015-16 RCG 6-5-16 2016-17			



Segment	Segment Description	Constrained	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included in 2018 Asset Base
937	Maitland To Thornton (Coal Line)	Yes	178	0937ED	RCG 30-4-18 2018-2019	Rerailing	90% GTK	240,539
937	Maitland To Thornton (Coal Line)	Yes	186	0937BT	RCG 25-3-15 2015-16	Turnout Renewal	75% GTK	888,059
				0937BW	RCG 25-3-15 2015-16			
				0937DC	RCG 6-5-16 2016-17			
				0937DD	RCG 6-5-16 2016-17			
				0937DE	RCG 6-5-16 2016-17			
0937W4	RCG 2-4-14 2014-15; RCG 25-5-15 2015-16							
937	Maitland To Thornton (Coal Line)	Yes	229	0937CT	RCG 25-3-15 2015-16 RCG 6-5-16 2016-2017	Track Strengthening / Upgrading	75% GTK	382
937	Maitland To Thornton (Coal Line)	Yes	772	0937CU	RCG 29-1-15 2015-2016	Signalling System Upgrades	50% Train KM	4,359,277
946	Farley To Maitland	Yes	178	0946W8	RCG 30-4-18 2018-2019	Rerailing	90% GTK	429,164
946	Farley To Maitland	Yes	186	0946S9	RCG 25-3-15 2015-16	Turnout Renewal	75% GTK	893,452
				0946V2	RCG 6-5-16 2016-17			
947	Branxton To Farley	Yes	253	0947W6	RCG 2-4-14 2014-15; RCG 6-5-16 2016-17; RCG 11-5-17 2017-2018; Internal Variation 2017-18	Bridge Replacement or Modification	0%	6,363,448
948	Whittingham To Branxton	Yes	178	0948CP	RCG 11-5-17 2017-2018	Rerailing	90% GTK	377,747
				0948DC	RCG 30-4-18 2018-2019			
948	Whittingham To Branxton	Yes	229	0948DG	RCG 30-4-18 2018-2019	Track Strengthening / Upgrading	75% GTK	631,604
948	Whittingham To Branxton	Yes	330	0948CZ	RCG 6-5-16 2016-17 RCG 22-6-18 2017-18	Wayside Detection Systems - New Install	0%	2,659,840
948	Whittingham To Branxton	Yes	815	0948CX	RCG 11-5-17 2017-2018	Power Supply Upgrade	0%	33,481
951	Saxonvale Jct To Whittingham	Yes	229	0951V5	RCG 30-4-18 2018-2019	Track Strengthening / Upgrading	75% GTK	992,951
955	Camberwell Jct To Whittingham	Yes	178	0955FU	RCG 30-4-18 2018-2019	Rerailing	90% GTK	874,406
				0955FV	RCG 30-4-18 2018-2019			
				0955FW	RCG 30-4-18 2018-2019			
955	Camberwell Jct To Whittingham	Yes	253	2531	RCG 25-3-15 2015-16; RCG 3-6-16; RCG 8-6-17; RCG 23-2-18	Bridge Replacement or Modification (incl interest on construction)	0%	9,798,315

Segment	Segment Description	Constrained	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included in 2018 Asset Base
956	Glennies Ck To Camberwell Jct	Yes	178	0956Y5	RCG 11-5-17 2017-2018	Rerailing	90% GTK	206,526
				0956Z5	RCG 30-4-18 2018-2019			
958	Draytons Jct To Newdell Jct	Yes	178	0958V3	RCG 30-4-18 2018-2019	Rerailing	90% GTK	910,535
961	Muswellbrook To Draytons Jct	Yes	178	0961CZ	RCG 30-4-18 2018-2019	Rerailing	90% GTK	3,710,663
				0961DA	RCG 30-4-18 2018-2019			
				0961DB	RCG 30-4-18 2018-2019			
				0961DC	RCG 30-4-18 2018-2019			
970	Bengalla Jct To Muswellbrook	Yes	178	0970T2	RCG 11-5-17 2017-2018	Rerailing	90% GTK	323,748
				0970U4	RCG 30-4-18 2018-2019			
	<b>Subtotal Pricing Zone 1</b>							<b>44,987,016</b>
971	Anvil Hill To Bengalla Jct	Yes	817	0971P1	RCG 11-5-17 2017-2018	Installation of upgraded communications	0%	6,979
972	Sandy Hollow To Anvil Hill	Yes	178	0972BA	RCG 11-5-17 2017-2018	Rerailing	90% GTK	2,299,174
				0972BB	RCG 11-5-17 2017-2018			
				0972BT	RCG 30-4-18 2018-2019			
				0972BU	RCG 30-4-18 2018-2019			
				0972BV	RCG 30-4-18 2018-2019			
972	Sandy Hollow To Anvil Hill	Yes	229	0972CS	RCG 11/10/2018			
972	Sandy Hollow To Anvil Hill	Yes	229	0972BC	RCG 11-5-17 2017-2018	Track Strengthening / Upgrading	75% GTK	(2,885)
973	Wilpinjong To Sandy Hollow	Yes	178	0973RF	RCG 11-5-17 2017-2018	Rerailing	90% GTK	3,662,795
				0973RG	RCG 11-5-17 2017-2018			
				0973RH	RCG 11-5-17 2017-2018			
				0973RI	RCG 11-5-17 2017-2018			
				0973SJ	RCG 30-4-18 2018-2019			
				0973SK	RCG 30-4-18 2018-2019			
				0973SL	RCG 30-4-18 2018-2019			
				0973SP	RCG 30-4-18 2018-2019			
				0973SQ	RCG 30-4-18 2018-2019			
				0973SR	RCG 30-4-18 2018-2019			
973	Sandy Hollow To Anvil Hill	Yes	254	0973TV	RCG 24-8-18			
973	Wilpinjong To Sandy Hollow	Yes	254	0973TE	RCG 30-4-18 2018-2019	Culvert Replacement or Modification	0%	697,810
				0973TF	RCG 30-4-18 2018-2019			
				0973TG	RCG 30-4-18 2018-2019			
	<b>Subtotal Pricing Zone 2</b>							<b>6,663,873</b>

Segment	Segment Description	Constrained	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included in 2018 Asset Base
962	Dartbrook Jct To Muswellbrook	No	178	0962T7	RCG 11-5-17 2017-2018	Rerailing	90% GTK	259,287
962	Dartbrook Jct To Muswellbrook	No	254	0962T9	RCG 11-5-17 2017-2018	Culvert Replacement or Modification	0%	204,069
962	Dartbrook Jct To Muswellbrook	No	817	0962U8	RCG 11-5-17 2017-2018	Installation of upgraded communications	0%	11,041
963	Murulla To Dartbrook Jct	No	229	0963IQ	RCG 3-12-15 30TAL 5B2	Track Strengthening / Upgrading	75% GTK	(20,000)
963	Murulla To Dartbrook Jct	No	760	0963JG	RCG 6-5-16 2016-2017	Track Circuit Renewal, Installation or Upgrade	0%	100,103
963	Murulla To Dartbrook Jct	No	815	0963KO	RCG 11-5-17 2017-2018	Power Supply Upgrade	0%	82,563
964	Werris Creek To Murulla	No	178	0964RY	RCG 11-5-17 2017-2018	Rerailing	90% GTK	605,746
				0964TD	RCG 30-4-18 2018-2019			
				0964TE	RCG 30-4-18 2018-2019			
964	Werris Creek To Murulla	No	186	0964PX	RCG 3-12-15 30TAL 5B2	Turnout Renewal	75% GTK	1,581,561
				0987DC	RCG 11-5-17 2017-2018 RCG 30-4-18 2018-2019			
				0987DD	RCG 11-5-17 2017-2018 RCG 30-4-18 2018-2019			
964	Werris Creek To Murulla	No	223	0964SA	RCG 11-5-17 2017-2018	Resleepering	75% GTK	535,308
964	Werris Creek To Murulla	No	229	0964PP	RCG 3-12-15 30TAL 5B2	Track Strengthening / Upgrading	75% GTK	1,837,993
				0964TH	RCG 30-4-18 2018-2019			
				0987EA	RCG 8-2-18			
				0987Z2	RCG 3-12-15 30TAL 5B2			
964	Werris Creek To Murulla	No	253	0987DX	RCG 30-4-18 2018-2019	Bridge Replacement or Modification	0%	1,846,545
964	Werris Creek To Murulla	No	254	0964RI	RCG 6-5-16 2016-2017	Culvert Replacement or Modification	0%	171,071
				0964SF	RCG 11-5-17 2017-2018			
				0964SG	RCG 11-5-17 2017-2018			
				0964SH	RCG 11-5-17 2017-2018			
964	Werris Creek To Murulla	No	262	0964RH	RCG 6-5-16 2016-2017 Internal Variation 2017-18	Level Crossing Upgrade	0%	444,624
964	Werris Creek To Murulla	No	815	0964SZ	RCG 11-5-17 2017-2018	Power Supply Upgrade	0%	81,918
966	Watermark To Gap	No	229	0966AJ	RCG 11-5-17 2017-2018	Track Strengthening / Upgrading	75% GTK	6,064,748
				0966AN	RCG 30-4-18 2018-2019			
967	Boggabri Jct To Gunnedah Jct	No	229	0967Y9	RCG 11-5-17 2017-2018	Track Strengthening / Upgrading	75% GTK	2,551,017
				0967Z7	RCG 11-5-17 2017-2018			
968	Turrawan To Boggabri Jct	No	254	0968S3	RCG 11-5-17 2017-2018	Culvert Replacement or Modification	0%	213,586

Segment	Segment Description	Constrained	Activity	Project Code	Date of RCG Endorsement	Description of Activity	Incremental % & Allocator	Included in 2018 Asset Base
				0968S4	RCG 11-5-17 2017-2018			
	<b>Subtotal Pricing Zone 3</b>							<b>16,571,180</b>
	<b>Total</b>							<b>68,222,069</b>

**APPENDIX D 2018 DISPOSALS**

**Table D1: 2018 Major Project Disposals & Loss On Disposals**

Segment	Project	Activity	2018 RAB Value \$	Disposal Proceeds \$	Net Loss On Disposal \$	Constrained Network
<b>Pricing Zone 1</b>						
		Nil	-	-	-	
<b>Sub-Total</b>			-	-	-	
<b>Pricing Zone 2</b>						
		Nil	-	-	-	
<b>Sub-Total</b>			-	-	-	
<b>Pricing Zone 3</b>						
		Nil	-	-	-	
<b>Sub-Total</b>			-	-	-	
<b>Total</b>			-	-	-	

**Table D2: 2018 Corridor Capital Project Disposals & Loss On Disposals**

Segment	Project	Activity	2018 RAB Value \$	Disposal Proceeds \$	Net Loss On Disposal \$	Constrained Network
<b>Pricing Zone 1</b>						
0916	0916AU	Point Machine Replacement(CAP)	14,586	-	14,586	Yes
0916	0916AV	Signal/Xing Lamp Upg (CAP)	3,087	-	3,087	Yes
0916	0916AW	Signal/Xing Lamp Upg (CAP)	3,087	-	3,087	Yes
0916	0916AX	Signal/Xing Lamp Upg (CAP)	3,087	-	3,087	Yes
0916	0916AY	Signal/Xing Lamp Upg (CAP)	3,087	-	3,087	Yes
0916	0916AZ	Signal/Xing Lamp Upg (CAP)	3,087	-	3,087	Yes
0916	0916BA	Signal/Xing Lamp Upg (CAP)	3,087	-	3,087	Yes
0916	0916BB	Signal/Xing Lamp Upg (CAP)	3,087	-	3,087	Yes
0916	0916U7	Turnout Renewal(CAP)	30,088	3,358	26,730	Yes
0916	Weighbridge Strategy	Weighbridge	92,785	-	92,785	Yes
0916	Weighbridge Strategy	Weighbridge	150,997	-	150,997	Yes
0917	0917L6	Turnout Renewal(CAP)	69,496	3,358	66,138	Yes
0930	Weighbridge Strategy	Weighbridge	160,483	-	160,483	Yes
0931	0931S9	Power Supply Upgrade(CAP)	6,089	-	6,089	Yes
0931	0931T3	Rerailing (CAP)	1,945	472	1,473	Yes
0931	0931T3	Rerailing (CAP)	458,216	24,780	433,435	Yes
0931	0931T3	Rerailing (CAP)	134,260	6,477	127,783	Yes
0931	0931T3	Resleepering (CAP)	2,853	-	2,853	Yes
0931	0931T3	Resleepering (CAP)	726	-	726	Yes
0936	0936GR	Resleepering (CAP)	374	-	374	Yes
0936	0936GR	Resleepering (CAP)	236	-	236	Yes
0936	0936GR	Track Strengthening / Upgrading(CAP)	17,297	-	17,297	Yes
0936	0936GR	Track Strengthening / Upgrading(CAP)	10,928	-	10,928	Yes
0936	0936HJ	Rerailing (CAP)	152,144	9,833	142,310	Yes
0936	0936HK	Track Strengthening / Upgrading(CAP)	4,324	-	4,324	Yes
0936	0936HK	Track Strengthening / Upgrading(CAP)	2,732	-	2,732	Yes
0936	0936HL	Track Strengthening / Upgrading(CAP)	3,459	-	3,459	Yes
0936	0936HL	Track Strengthening / Upgrading(CAP)	2,186	-	2,186	Yes
0936	0936P7	Resleepering (CAP)	374	-	374	Yes
0936	0936P7	Resleepering (CAP)	236	-	236	Yes
0936	0936P7	Track Strengthening / Upgrading(CAP)	4,497	-	4,497	Yes
0936	0936P7	Track Strengthening / Upgrading(CAP)	2,841	-	2,841	Yes
0936	Weighbridge Strategy	Weighbridge	717,659	-	717,659	Yes

Segment	Project	Activity	2018 RAB Value \$	Disposal Proceeds \$	Net Loss On Disposal \$	Constrained Network
0937	0937BW	Turnout Renewal(CAP)	70,421	3,312	67,110	Yes
0937	0937CU	Signalling System Upgrades(CAP)	57,601	-	57,601	Yes
0937	0937CU	Signalling System Upgrades(CAP)	17,033	-	17,033	Yes
0937	0937CU	Signalling System Upgrades(CAP)	116,741	-	116,741	Yes
0937	0937CU	Signalling System Upgrades(CAP)	14,812	-	14,812	Yes
0937	0937CU	Signalling System Upgrades(CAP)	37,029	-	37,029	Yes
0937	0937ED	Rerailing (CAP)	115,040	9,886	105,154	Yes
0946	0946S9	Turnout Renewal(CAP)	56,072	3,312	52,761	Yes
0946	0946W8	Rerailing (CAP)	17,843	8,627	9,215	Yes
0946	0946W8	Rerailing (CAP)	172,037	10,017	162,020	Yes
0947	0947W6	Rerailing (CAP)	1,697	267	1,430	Yes
0947	0947W6	Rerailing (CAP)	868	267	601	Yes
0947	0947W6	Resleepering (CAP)	1,359	-	1,359	Yes
0947	0947W6	Resleepering (CAP)	695	-	695	Yes
0947	0947W6	Bridge Replacement or Modification(CAP)	57,881	-	57,881	Yes
0947	0947W6	Bridge Replacement or Modification(CAP)	228,594	-	228,594	Yes
0948	0948CX	Power Supply Upgrade(CAP)	58,152	-	58,152	Yes
0948	0948DC	Rerailing (CAP)	54,474	16,179	38,295	Yes
0948	0948DC	Resleepering (CAP)	1,526	-	1,526	Yes
0948	0948DG	Track Strengthening / Upgrading(CAP)	1,365,981	-	1,365,981	Yes
0951	0951V5	Track Strengthening / Upgrading(CAP)	2,126	-	2,126	Yes
0955	0955FU	Rerailing (CAP)	169,505	12,587	156,918	Yes
0955	0955FV	Rerailing (CAP)	126,731	10,762	115,969	Yes
0955	0955FV	Rerailing (CAP)	8,523	565	7,958	Yes
0955	0955FW	Rerailing (CAP)	32,200	8,155	24,045	Yes
0955	2531	Bridge Replacement or Modification(CAP)	540,640	-	540,640	Yes
0956	0956Z5	Rerailing (CAP)	195,184	15,026	180,159	Yes
0958	0958V3	Rerailing (CAP)	254,747	8,470	246,277	Yes
0958	0958V3	Rerailing (CAP)	137,737	29,658	108,079	Yes
0958	0958V3	Resleepering (CAP)	4,852	-	4,852	Yes
0961	0961CZ	Rerailing (CAP)	1,293,426	101,403	1,192,023	Yes
0961	0961DA	Rerailing (CAP)	147,060	29,999	117,061	Yes
0961	0961DA	Rerailing (CAP)	612,817	20,008	592,809	Yes
0961	0961DA	Resleepering (CAP)	6,849	-	6,849	Yes
0961	0961DB	Rerailing (CAP)	92,041	18,775	73,266	Yes
0961	0961DB	Resleepering (CAP)	2,592	-	2,592	Yes
0961	0961DC	Rerailing (CAP)	550,170	17,962	532,207	Yes
0970	0970T2	Rerailing (CAP)	35,833	7,133	28,700	Yes
0970	0970U4	Rerailing (CAP)	124,872	7,062	117,810	Yes

Segment	Project	Activity	2018 RAB Value \$	Disposal Proceeds \$	Net Loss On Disposal \$	Constrained Network
Sub-Total			<b>8,847,179</b>	<b>387,710</b>	<b>8,459,468</b>	
<b>Pricing Zone 2</b>						
0972	0972BT	Rerailing (CAP)	1,264	236	1,028	Yes
0972	0972BT	Rerailing (CAP)	217,500	14,842	202,658	Yes
0972	0972BT	Rerailing (CAP)	47,315	8,837	38,478	Yes
0972	0972BT	Resleepering (CAP)	1,324	-	1,324	Yes
0972	0972BU	Rerailing (CAP)	19,235	3,592	15,642	Yes
0972	0972BU	Rerailing (CAP)	222,663	18,880	203,783	Yes
0972	0972BU	Rerailing (CAP)	2,387	446	1,941	Yes
0972	0972BV	Rerailing (CAP)	221,118	18,749	202,369	Yes
0972	0972CS	Rerailing (CAP)	172,155	11,748	160,407	Yes
0973	0973RF	Rerailing (CAP)	54,935	10,515	44,420	Yes
0973	0973RF	Resleepering (CAP)	1,538	-	1,538	Yes
0973	0973RG	Rerailing (CAP)	73,429	14,055	59,374	Yes
0973	0973RG	Resleepering (CAP)	2,055	-	2,055	Yes
0973	0973RH	Rerailing (CAP)	63,429	12,141	51,288	Yes
0973	0973RH	Resleepering (CAP)	1,775	-	1,775	Yes
0973	0973SJ	Rerailing (CAP)	491,308	30,549	460,758	Yes
0973	0973SK	Rerailing (CAP)	83,156	15,917	67,239	Yes
0973	0973SK	Resleepering (CAP)	2,327	-	2,327	Yes
0973	0973SL	Rerailing (CAP)	14,903	1,023	13,880	Yes
0973	0973SL	Rerailing (CAP)	332,318	20,663	311,655	Yes
0973	0973SL	Rerailing (CAP)	5,754	1,101	4,652	Yes
0973	0973SP	Rerailing (CAP)	56,990	10,909	46,081	Yes
0973	0973SP	Resleepering (CAP)	1,595	-	1,595	Yes
0973	0973SQ	Rerailing (CAP)	53,154	10,174	42,980	Yes
0973	0973SQ	Resleepering (CAP)	1,488	-	1,488	Yes
0973	0973SR	Rerailing (CAP)	37,537	7,185	30,352	Yes
0973	0973SR	Resleepering (CAP)	1,051	-	1,051	Yes
0973	0973TE	Culvert Replacement or Modification(CAP)	2,876	-	2,876	Yes
0973	0973TF	Culvert Replacement or Modification(CAP)	2,876	-	2,876	Yes
0973	0973TG	Culvert Replacement or Modification(CAP)	2,876	-	2,876	Yes
0973	0973TV	Rerailing (CAP)	77,594	5,271	72,324	Yes
Sub-Total			<b>2,269,924</b>	<b>216,835</b>	<b>2,053,090</b>	
<b>Pricing Zone 3</b>						
0962	0962T7	Rerailing (CAP)	118,113	9,414	108,699	No
0962	0962T7	Resleepering (CAP)	1,172	-	1,172	No
0964	0964RI	Culvert Replacement or Modification(CAP)	306	-	306	No
0964	0964SA	Resleepering (CAP)	149,066	-	149,066	No



Segment	Project	Activity	2018 RAB Value \$	Disposal Proceeds \$	Net Loss On Disposal \$	Constrained Network
0964	0964TD	Rerailing (CAP)	18,119	7,500	10,620	No
0964	0964TD	Rerailing (CAP)	29,523	12,220	17,303	No
0964	0964TD	Resleepering (CAP)	888	-	888	No
0964	0964TD	Resleepering (CAP)	1,447	-	1,447	No
0964	0964TE	Rerailing (CAP)	13,431	5,559	7,872	No
0964	0964TH	Track Strengthening / Upgrading(CAP)	6,996	-	6,996	No
0966	0966AJ	Track Strengthening / Upgrading(CAP)	388,994	-	388,994	No
0966	0966AN	Resleepering (CAP)	9,395	-	9,395	No
0966	0966AN	Track Strengthening / Upgrading(CAP)	155,598	-	155,598	No
0966	0966AN	Track Strengthening / Upgrading(CAP)	61,305	-	61,305	No
0966	0966AN	Track Strengthening / Upgrading(CAP)	21,784	-	21,784	No
0966	0966AN	Track Strengthening / Upgrading(CAP)	40,455	-	40,455	No
0966	0966AN	Level Crossing Upgrade (Civil)(CAP)	67,219	-	67,219	No
0967	0967Z7	Resleepering (CAP)	1,606	-	1,606	No
0967	0967Z7	Resleepering (CAP)	3,047	-	3,047	No
0967	0967Z7	Track Strengthening / Upgrading(CAP)	80,694	-	80,694	No
0967	0967Z7	Track Strengthening / Upgrading(CAP)	153,095	-	153,095	No
0987	0987DC	Turnout Renewal(CAP)	100,737	3,126	97,611	No
0987	0987DD	Turnout Renewal(CAP)	100,737	3,126	97,611	No
0987	0987DX	Bridge Replacement or Modification(CAP)	13,207	-	13,207	No
0987	0987EA	Resleepering (CAP)	897	-	897	No
0987	0987EA	Track Strengthening / Upgrading(CAP)	21,214	-	21,214	No
Sub-Total			<b>1,559,047</b>	<b>40,945</b>	<b>1,518,102</b>	
<b>Sub-Total Corridor Capital Disposals</b>			<b>12,676,150</b>	<b>645,490</b>	<b>12,030,660</b>	

**Table D3: 2018 Summary Of Disposals & Loss On Disposals**

	2018 RAB Value \$	Net Disposal Proceeds/(Costs) \$	Net Loss On Disposal \$
<b>Major Projects</b>			
Pricing Zone 1	-	-	-
Pricing Zone 2	-	-	-
Pricing Zone 3	-	-	-
<b>Sub-Total</b>	-	-	-
<b>Corridor Capital</b>			
Pricing Zone 1	8,847,179	387,710	8,459,468
Pricing Zone 2	2,269,924	216,835	2,053,090
Pricing Zone 3	1,559,047	40,945	1,518,102
<b>Sub-Total</b>	<b>12,676,150</b>	<b>645,490</b>	<b>12,030,660</b>
<b>Total</b>	<b>12,676,150</b>	<b>645,490</b>	<b>12,030,660</b>

**Table D4: 2018 Major Projects Disposals & Loss On Disposals Detailed**

Segment	Related Capital Project Code	Activity Details	Line Segment	Date Asset Removed	Track Metres/ Scope	Rail Metres (Rerailing only)	Unit of Measure	Unit Rate \$	Discount Factor	Rerailing Weight KG	Rail Condemning Rate	Turnout Weight (Tonnes)	Scrap Value/ Tonne (CAL18 ave.) \$	Cost of Removal of Redundant Assets \$	Asset RAB Value per DORC \$	Disposal Proceeds \$	Net Loss On Disposal \$
Pricing Zone 1		Nil													-	-	-
<b>Sub-Total</b>															-	-	-
Pricing Zone 2		Nil													-	-	-
<b>Sub-Total</b>															-	-	-
Pricing Zone 3		Nil													-	-	-
<b>Sub-Total</b>															-	-	-
<b>Total</b>															-	-	-

Table D5: 2018 Corridor Capital Project Disposals &amp; Loss On Disposals Detailed

Segment No	Related Capital Project Code	Activity Number	Activity Details	Line Segment	Date Asset Removed	Track Metres/ Scope	Rail Metres (Rerailing only)	Unit of Measure	Unit Rate \$	Discount Factor	Rerailing Weight KG	Rail Condemning Rate	Turnout Weight (Tonnes)	Scrap Value/ Tonne \$	Asset RAB WDV \$	Net Disposal Proceeds / (Cost of Removal) \$	Net Loss On Disposal \$
<b>Pricing Zone 1</b>																	
916	0916AU	759	Point Machine Replacement(CAP)	Scholey St Jct To Port Waratah	19/08/2018	2		Each	9,128.9	79.89%					14,586		14,586
916	0916AV	816	Signal/Xing Lamp Upg (CAP)	Scholey St Jct To Port Waratah	30/05/2018	1		Each	3,863.7	79.89%					3,087		3,087
916	0916AW	816	Signal/Xing Lamp Upg (CAP)	Scholey St Jct To Port Waratah	30/06/2018	1		Each	3,863.7	79.89%					3,087		3,087
916	0916AX	816	Signal/Xing Lamp Upg (CAP)	Scholey St Jct To Port Waratah	30/01/2018	1		Each	3,863.7	79.89%					3,087		3,087
916	0916AY	816	Signal/Xing Lamp Upg (CAP)	Scholey St Jct To Port Waratah	30/05/2018	1		Each	3,863.7	79.89%					3,087		3,087
916	0916AZ	816	Signal/Xing Lamp Upg (CAP)	Scholey St Jct To Port Waratah	30/05/2018	1		Each	3,863.7	79.89%					3,087		3,087
916	0916BA	816	Signal/Xing Lamp Upg (CAP)	Scholey St Jct To Port Waratah	30/05/2018	1		Each	3,863.7	79.89%					3,087		3,087
916	0916BB	816	Signal/Xing Lamp Upg (CAP)	Scholey St Jct To Port Waratah	30/05/2018	1		Each	3,863.7	79.89%					3,087		3,087
916	0916U7	186	Turnout Renewal(CAP)	Scholey St Jct To Port Waratah	31/07/2018	1		Each	37,661.7	79.89%		90%	14	266.49	30,088	3,358	26,730
916	Weighbridge Strategy	330	Weighbridge	Scholey St Jct To Port Waratah	18/01/2018	1		Each	116,595.3	79.58%					92,785		92,785
916	Weighbridge Strategy	330	Weighbridge	Scholey St Jct To Port Waratah	18/01/2018	1		Each	179,239.3	84.24%					150,997		150,997
917	0917L6	186	Turnout Renewal(CAP)	Waratah To Scholey St Jct (Coal Line)	01/10/2018	1		Each	86,988.9	79.89%		90%	14	266.49	69,496	3,358	66,138
930	Weighbridge Strategy	330	Weighbridge	NCIG To Kooragang Island	18/01/2018	1		Each	190,500.0	84.24%					160,483		160,483
931	0931S9	815	Power Supply Upgrade(CAP)	Sandgate To Kooragang East Jct	30/06/2018	2		Each	3,811.0	79.89%					6,089		6,089
931	0931T3	178	Rerailing (CAP)	Sandgate To Kooragang East Jct	23/02/2018	18	36	Per Rail Metre	67.6	79.89%	60	82%		266.49	1,945	472	1,473
931	0931T3	178	Rerailing (CAP)	Sandgate To Kooragang East Jct	23/02/2018	945	1890	Per Rail Metre	258.5	93.80%	60	82%		266.49	458,216	24,780	433,435
931	0931T3	178	Rerailing (CAP)	Sandgate To Kooragang East Jct	23/02/2018	247	494	Per Rail Metre	349.5	77.77%	60	82%		266.49	134,260	6,477	127,783
931	0931T3	223	Resleepering (CAP)	Sandgate To Kooragang East Jct	23/02/2018	55		Each	64.9	79.89%					2,853		2,853
931	0931T3	223	Resleepering (CAP)	Sandgate To Kooragang East Jct	23/02/2018	14		Each	64.9	79.89%					726		726
936	0936GR	223	Resleepering (CAP)	Thornton To Sandgate (Coal Line)	12/06/2018	6		Each	77.9	79.89%					374		374
936	0936GR	223	Resleepering (CAP)	Thornton To Sandgate (Coal Line)	12/06/2018	6		Each	49.2	79.89%					236		236
936	0936GR	229	Track Strengthening / Upgrading(CAP)	Thornton To Sandgate (Coal Line)	12/06/2018	200		Per Metre	108.3	79.89%					17,297		17,297
936	0936GR	229	Track Strengthening / Upgrading(CAP)	Thornton To Sandgate (Coal Line)	12/06/2018	200		Per Metre	68.4	79.89%					10,928		10,928
936	0936HJ	178	Rerailing (CAP)	Thornton To Sandgate (Coal Line)	20/11/2018	375	750	Per Rail Metre	240.8	84.24%	60	82%		266.49	152,144	9,833	142,310
936	0936HK	229	Track Strengthening / Upgrading(CAP)	Thornton To Sandgate (Coal Line)	23/11/2018	50		Per Metre	108.3	79.89%					4,324		4,324
936	0936HK	229	Track Strengthening / Upgrading(CAP)	Thornton To Sandgate (Coal Line)	23/11/2018	50		Per Metre	68.4	79.89%					2,732		2,732
936	0936HL	229	Track Strengthening / Upgrading(CAP)	Thornton To Sandgate (Coal Line)	23/11/2018	40		Per Metre	108.3	79.89%					3,459		3,459
936	0936HL	229	Track Strengthening / Upgrading(CAP)	Thornton To Sandgate (Coal Line)	23/11/2018	40		Per Metre	68.4	79.89%					2,186		2,186
936	0936P7	223	Resleepering (CAP)	Thornton To Sandgate (Coal Line)	01/11/2018	6		Each	77.9	79.89%					374		374
936	0936P7	223	Resleepering (CAP)	Thornton To Sandgate (Coal Line)	01/11/2018	6		Each	49.2	79.89%					236		236
936	0936P7	229	Track Strengthening / Upgrading(CAP)	Thornton To Sandgate (Coal Line)	01/11/2018	52		Per Metre	108.3	79.89%					4,497		4,497
936	0936P7	229	Track Strengthening / Upgrading(CAP)	Thornton To Sandgate (Coal Line)	01/11/2018	52		Per Metre	68.4	79.89%					2,841		2,841
936	Weighbridge Strategy	330	Weighbridge	Thornton To Sandgate (Coal Line)	18/01/2018	1		Each	905,089.9	79.29%					717,659		717,659
937	0937BW	186	Turnout Renewal(CAP)	Maitland To Thornton (Coal Line)	25/10/2018	1		Each	88,147.7	79.89%		90%	13.808	266.49	70,421	3,312	67,110

Segment No	Related Capital Project Code	Activity Number	Activity Details	Line Segment	Date Asset Removed	Track Metres/ Scope	Rail Metres (Rerailing only)	Unit of Measure	Unit Rate \$	Discount Factor	Rerailing Weight KG	Rail Condemning Rate	Turnout Weight (Tonnes)	Scrap Value/ Tonne \$	Asset RAB WDV \$	Net Disposal Proceeds / (Cost of Removal) \$	Net Loss On Disposal \$
937	0937CU	772	Signalling System Upgrades(CAP)	Maitland To Thornton (Coal Line)	14/06/2018	2		Each	36,050.0	79.89%					57,601		57,601
937	0937CU	772	Signalling System Upgrades(CAP)	Maitland To Thornton (Coal Line)	14/06/2018	8		Each	2,665.0	79.89%					17,033		17,033
937	0937CU	772	Signalling System Upgrades(CAP)	Maitland To Thornton (Coal Line)	14/06/2018	67		Each	2,181.0	79.89%					116,741		116,741
937	0937CU	772	Signalling System Upgrades(CAP)	Maitland To Thornton (Coal Line)	14/06/2018	9		Each	2,060.0	79.89%					14,812		14,812
937	0937CU	772	Signalling System Upgrades(CAP)	Maitland To Thornton (Coal Line)	14/06/2018	6000		Per Metre	7.7	79.89%					37,029		37,029
937	0937ED	178	Rerailing (CAP)	Maitland To Thornton (Coal Line)	20/09/2018	377	754	Per Rail Metre	189.2	80.64%	60	82%		266.49	115,040	9,886	105,154
946	0946S9	186	Turnout Renewal(CAP)	Farley To Maitland	31/07/2018	1		Each	70,186.7	79.89%			13.808	266.49	56,072	3,312	52,761
946	0946W8	178	Rerailing (CAP)	Farley To Maitland	20/09/2018	329	658	Per Rail Metre	33.9	79.89%	60	82%		266.49	17,843	8,627	9,215
946	0946W8	178	Rerailing (CAP)	Farley To Maitland	20/09/2018	382	764	Per Rail Metre	285.8	78.80%	60	82%		266.49	172,037	10,017	162,020
947	0947W6	178	Rerailing (CAP)	Branxton To Farley	30/05/2018	10	20.38	Per Rail Metre	104.2	79.89%	60	82%		266.49	1,697	267	1,430
947	0947W6	178	Rerailing (CAP)	Branxton To Farley	30/05/2018	10	20.38	Per Rail Metre	53.3	79.89%	60	82%		266.49	868	267	601
947	0947W6	223	Resleepering (CAP)	Branxton To Farley	30/05/2018	17		Each	100.0	79.89%					1,359		1,359
947	0947W6	223	Resleepering (CAP)	Branxton To Farley	30/05/2018	17		Each	51.2	79.89%					695		695
947	0947W6	253	Bridge Replacement or Modification(CAP)	Branxton To Farley	30/05/2018	1		Each	72,998.0	79.29%					57,881		57,881
947	0947W6	253	Bridge Replacement or Modification(CAP)	Branxton To Farley	30/05/2018	1		Each	286,135.0	79.89%					228,594		228,594
948	0948CX	815	Power Supply Upgrade(CAP)	Whittingham To Branxton	30/01/2018	2		Each	36,395.1	79.89%					58,152		58,152
948	0948DC	178	Rerailing (CAP)	Whittingham To Branxton	23/11/2018	617	1234	Per Rail Metre	55.3	79.89%	60	82%		266.49	54,474	16,179	38,295
948	0948DC	223	Resleepering (CAP)	Whittingham To Branxton	23/11/2018	36		Each	53.0	79.89%					1,526		1,526
948	0948DG	229	Track Strengthening / Upgrading(CAP)	Whittingham To Branxton	02/08/2018	560		Per Metre	3,054.6	79.86%					1,365,981		1,365,981
951	0951V5	229	Track Strengthening / Upgrading(CAP)	Saxonvale Jct To Whittingham	24/09/2018	30		Per Metre	88.7	79.89%					2,126		2,126
955	0955FU	178	Rerailing (CAP)	Camberwell Jct To Whittingham	20/09/2018	480	960	Per Rail Metre	221.1	79.86%	60	82%		266.49	169,505	12,587	156,918
955	0955FV	178	Rerailing (CAP)	Camberwell Jct To Whittingham	20/09/2018	381	762	Per Rail Metre	203.1	81.87%	60	88%		266.49	126,731	10,762	115,969
955	0955FV	178	Rerailing (CAP)	Camberwell Jct To Whittingham	20/09/2018	20	40	Per Rail Metre	236.1	90.27%	60	88%		266.49	8,523	565	7,958
955	0955FW	178	Rerailing (CAP)	Camberwell Jct To Whittingham	20/09/2018	311	622	Per Rail Metre	64.8	79.89%	60	82%		266.49	32,200	8,155	24,045
955	2531	253	Bridge Replacement or Modification(CAP)	Camberwell Jct To Whittingham	23/11/2018	1		Each	676,728.0	79.89%					540,640		540,640
956	0956Z5	178	Rerailing (CAP)	Glennies Ck To Camberwell Jct	20/09/2018	573	1146	Per Rail Metre	202.2	84.24%	60	82%		266.49	195,184	15,026	180,159
958	0958V3	178	Rerailing (CAP)	Draytons Jct To Newdell Jct	20/09/2018	323	646	Per Rail Metre	495.5	79.58%	60	82%		266.49	254,747	8,470	246,277
958	0958V3	178	Rerailing (CAP)	Draytons Jct To Newdell Jct	20/09/2018	1131	2262	Per Rail Metre	76.2	79.89%	60	82%		266.49	137,737	29,658	108,079
958	0958V3	223	Resleepering (CAP)	Draytons Jct To Newdell Jct	20/09/2018	83		Each	73.2	79.89%					4,852		4,852
961	0961CZ	178	Rerailing (CAP)	Muswellbrook To Draytons Jct	23/11/2018	3867	7734	Per Rail Metre	210.9	79.29%	60	82%		266.49	1,293,426	101,403	1,192,023
961	0961DA	178	Rerailing (CAP)	Muswellbrook To Draytons Jct	23/11/2018	1144	2288	Per Rail Metre	80.5	79.89%	60	82%		266.49	147,060	29,999	117,061
961	0961DA	178	Rerailing (CAP)	Muswellbrook To Draytons Jct	23/11/2018	763	1526	Per Rail Metre	506.5	79.29%	60	82%		266.49	612,817	20,008	592,809
961	0961DA	223	Resleepering (CAP)	Muswellbrook To Draytons Jct	23/11/2018	111		Each	77.2	79.89%					6,849		6,849
961	0961DB	178	Rerailing (CAP)	Muswellbrook To Draytons Jct	23/11/2018	716	1432	Per Rail Metre	80.5	79.89%	60	82%		266.49	92,041	18,775	73,266
961	0961DB	223	Resleepering (CAP)	Muswellbrook To Draytons Jct	23/11/2018	42		Each	77.2	79.89%					2,592		2,592
961	0961DC	178	Rerailing (CAP)	Muswellbrook To Draytons Jct	23/11/2018	685	1370	Per Rail Metre	506.5	79.29%	60	82%		266.49	550,170	17,962	532,207

Segment No	Related Capital Project Code	Activity Number	Activity Details	Line Segment	Date Asset Removed	Track Metres/ Scope	Rail Metres (Rerailing only)	Unit of Measure	Unit Rate \$	Discount Factor	Rerailing Weight KG	Rail Condemning Rate	Turnout Weight (Tonnes)	Scrap Value/ Tonne \$	Asset RAB WDV \$	Net Disposal Proceeds / (Cost of Removal) \$	Net Loss On Disposal \$
970	0970T2	178	Rerailing (CAP)	Bengalla Jct To Muswellbrook	23/02/2018	272	544	Per Rail Metre	82.4	79.89%	60	82%		266.49	35,833	7,133	28,700
970	0970U4	178	Rerailing (CAP)	Bengalla Jct To Muswellbrook	23/11/2018	250	500	Per Rail Metre	266.2	93.80%	60	88%		266.49	124,872	7,062	117,810
<b>Sub Total</b>															<b>8,847,179</b>	<b>387,710</b>	<b>8,459,468</b>
<b>Pricing Zone 2</b>																	
972	0972BT	178	Rerailing (CAP)	Sandy Hollow To Anvil Hill	02/08/2018	9	18	Per Rail Metre	87.9	79.89%	60	82%		266.49	1,264	236	1,028
972	0972BT	178	Rerailing (CAP)	Sandy Hollow To Anvil Hill	02/08/2018	566	1132	Per Rail Metre	228.1	84.24%	60	82%		266.49	217,500	14,842	202,658
972	0972BT	178	Rerailing (CAP)	Sandy Hollow To Anvil Hill	02/08/2018	337	674	Per Rail Metre	87.9	79.89%	60	82%		266.49	47,315	8,837	38,478
972	0972BT	223	Resleepering (CAP)	Sandy Hollow To Anvil Hill	02/08/2018	20		Each	84.4	79.89%					1,324		1,324
972	0972BU	178	Rerailing (CAP)	Sandy Hollow To Anvil Hill	01/07/2018	137	274	Per Rail Metre	87.9	79.89%	60	82%		266.49	19,235	3,592	15,642
972	0972BU	178	Rerailing (CAP)	Sandy Hollow To Anvil Hill	01/07/2018	720	1440	Per Rail Metre	191.8	80.64%	60	82%		266.49	222,663	18,880	203,783
972	0972BU	178	Rerailing (CAP)	Sandy Hollow To Anvil Hill	01/07/2018	17	34	Per Rail Metre	87.9	79.89%	60	82%		266.49	2,387	446	1,941
972	0972BV	178	Rerailing (CAP)	Sandy Hollow To Anvil Hill	12/06/2018	715	1430	Per Rail Metre	191.8	80.64%	60	82%		266.49	221,118	18,749	202,369
972	0972CS	178	Rerailing (CAP)	Sandy Hollow To Anvil Hill	23/11/2018	448	896	Per Rail Metre	228.1	84.24%	60	82%		266.49	172,155	11,748	160,407
973	0973RF	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	12/04/2018	401	802	Per Rail Metre	85.7	79.89%	60	82%		266.49	54,935	10,515	44,420
973	0973RF	223	Resleepering (CAP)	Wilpinjong To Sandy Hollow	12/04/2018	23		Each	82.3	79.89%					1,538		1,538
973	0973RG	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	30/04/2018	536	1072	Per Rail Metre	85.7	79.89%	60	82%		266.49	73,429	14,055	59,374
973	0973RG	223	Resleepering (CAP)	Wilpinjong To Sandy Hollow	30/04/2018	31		Each	82.3	79.89%					2,055		2,055
973	0973RH	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	01/07/2018	463	926	Per Rail Metre	85.7	79.89%	60	82%		266.49	63,429	12,141	51,288
973	0973RH	223	Resleepering (CAP)	Wilpinjong To Sandy Hollow	01/07/2018	27		Each	82.3	79.89%					1,775		1,775
973	0973SJ	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	02/08/2018	1165	2330	Per Rail Metre	261.5	80.64%	60	82%		266.49	491,308	30,549	460,758
973	0973SK	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	20/09/2018	607	1214	Per Rail Metre	85.7	79.89%	60	82%		266.49	83,156	15,917	67,239
973	0973SK	223	Resleepering (CAP)	Wilpinjong To Sandy Hollow	20/09/2018	35		Each	82.3	79.89%					2,327		2,327
973	0973SL	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	12/06/2018	39	78	Per Rail Metre	219.3	87.13%	60	82%		266.49	14,903	1,023	13,880
973	0973SL	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	12/06/2018	788	1576	Per Rail Metre	261.5	80.64%	60	82%		266.49	332,318	20,663	311,655
973	0973SL	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	12/06/2018	42	84	Per Rail Metre	85.7	79.89%	60	82%		266.49	5,754	1,101	4,652
973	0973SP	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	20/09/2018	416	832	Per Rail Metre	85.7	79.89%	60	82%		266.49	56,990	10,909	46,081
973	0973SP	223	Resleepering (CAP)	Wilpinjong To Sandy Hollow	20/09/2018	24		Each	82.3	79.89%					1,595		1,595
973	0973SQ	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	20/09/2018	388	776	Per Rail Metre	85.7	79.89%	60	82%		266.49	53,154	10,174	42,980
973	0973SQ	223	Resleepering (CAP)	Wilpinjong To Sandy Hollow	20/09/2018	23		Each	82.3	79.89%					1,488		1,488
973	0973SR	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	20/09/2018	274	548	Per Rail Metre	85.7	79.89%	60	82%		266.49	37,537	7,185	30,352
973	0973SR	223	Resleepering (CAP)	Wilpinjong To Sandy Hollow	20/09/2018	16		Each	82.3	79.89%					1,051		1,051
973	0973TE	254	Culvert Replacement or Modification(CAP)	Wilpinjong To Sandy Hollow	01/12/2018	1		Each	3,599.8	79.89%					2,876		2,876
973	0973TF	254	Culvert Replacement or Modification(CAP)	Wilpinjong To Sandy Hollow	03/12/2018	1		Each	3,599.8	79.89%					2,876		2,876
973	0973TG	254	Culvert Replacement or Modification(CAP)	Wilpinjong To Sandy Hollow	03/12/2018	1		Each	3,599.8	79.89%					2,876		2,876
973	0973TV	178	Rerailing (CAP)	Wilpinjong To Sandy Hollow	02/08/2018	201	402	Per Rail Metre	229.1	84.24%	60	82%		266.49	77,594	5,271	72,324
<b>Sub Total</b>															<b>2,269,924</b>	<b>216,835</b>	<b>2,053,090</b>

Segment No	Related Capital Project Code	Activity Number	Activity Details	Line Segment	Date Asset Removed	Track Metres/ Scope	Rail Metres (Rerailing only)	Unit of Measure	Unit Rate \$	Discount Factor	Rerailing Weight KG	Rail Condemning Rate	Turnout Weight (Tonnes)	Scrap Value/ Tonne \$	Asset RAB WDV \$	Net Disposal Proceeds / (Cost of Removal) \$	Net Loss On Disposal \$
<b>Pricing Zone 3</b>																	
962	0962T7	178	Rerailing (CAP)	Dartbrook Jct To Muswellbrook	02/08/2018	359	718	Per Rail Metre	209.9	78.36%	60	82%		266.49	118,113	9,414	108,699
962	0962T7	223	Resleepering (CAP)	Dartbrook Jct To Muswellbrook	20/09/2018	21		Each	70.1	79.89%					1,172		1,172
964	0964RI	254	Culvert Replacement or Modification(CAP)	Werris Creek To Murulla	23/02/2018	1		Each	386.7	79.20%					306		306
964	0964SA	223	Resleepering (CAP)	Werris Creek To Murulla	31/07/2018	2824		Each	66.7	79.20%					149,066		149,066
964	0964TD	178	Rerailing (CAP)	Werris Creek To Murulla	02/08/2018	286	572	Per Rail Metre	40.0	79.20%	60	82%		266.49	18,119	7,500	10,620
964	0964TD	178	Rerailing (CAP)	Werris Creek To Murulla	02/08/2018	466	932	Per Rail Metre	40.0	79.20%	60	82%		266.49	29,523	12,220	17,303
964	0964TD	223	Resleepering (CAP)	Werris Creek To Murulla	20/09/2018	17		Each	66.7	79.89%					888		888
964	0964TD	223	Resleepering (CAP)	Werris Creek To Murulla	20/09/2018	27		Each	66.7	79.89%					1,447		1,447
964	0964TE	178	Rerailing (CAP)	Werris Creek To Murulla	02/08/2018	212	424	Per Rail Metre	40.0	79.20%	60	82%		266.49	13,431	5,559	7,872
964	0964TH	229	Track Strengthening / Upgrading(CAP)	Werris Creek To Murulla	01/10/2018	93		Per Metre	95.0	79.20%					6,996		6,996
966	0966AJ	229	Track Strengthening / Upgrading(CAP)	Watermark To Gap	23/02/2018	1250		Per Metre	381.3	81.61%					388,994		388,994
966	0966AN	223	Resleepering (CAP)	Watermark To Gap	23/11/2018	38		Each	303.0	81.61%					9,395		9,395
966	0966AN	229	Track Strengthening / Upgrading(CAP)	Watermark To Gap	23/11/2018	500		Per Metre	381.3	81.61%					155,598		155,598
966	0966AN	229	Track Strengthening / Upgrading(CAP)	Watermark To Gap	23/11/2018	197		Per Metre	381.3	81.61%					61,305		61,305
966	0966AN	229	Track Strengthening / Upgrading(CAP)	Watermark To Gap	23/11/2018	70		Per Metre	381.3	81.61%					21,784		21,784
966	0966AN	229	Track Strengthening / Upgrading(CAP)	Watermark To Gap	23/11/2018	130		Per Metre	381.3	81.61%					40,455		40,455
966	0966AN	262	Level Crossing Upgrade (Civil)(CAP)	Watermark To Gap	23/11/2018	1		Each	82,365.5	81.61%					67,219		67,219
967	0967Z7	223	Resleepering (CAP)	Boggabri Jct To Gunnedah Jct	23/12/2018	15		Each	133.4	81.61%					1,606		1,606
967	0967Z7	223	Resleepering (CAP)	Boggabri Jct To Gunnedah Jct	23/12/2018	28		Each	133.4	81.61%					3,047		3,047
967	0967Z7	229	Track Strengthening / Upgrading(CAP)	Boggabri Jct To Gunnedah Jct	23/12/2018	253		Per Metre	390.8	81.61%					80,694		80,694
967	0967Z7	229	Track Strengthening / Upgrading(CAP)	Boggabri Jct To Gunnedah Jct	23/12/2018	480		Per Metre	390.8	81.61%					153,095		153,095
964	0987DC	186	Turnout Renewal(CAP)	Werris Creek To Murulla	23/11/2018	1		Each	127,194.3	79.20%		90%	13.034	266.49	100,737	3,126	97,611
964	0987DD	186	Turnout Renewal(CAP)	Werris Creek To Murulla	23/11/2018	1		Each	127,194.3	79.20%		90%	13.034	266.49	100,737	3,126	97,611
964	0987DX	253	Bridge Replacement or Modification(CAP)	Werris Creek To Murulla	10/12/2018	1		Each	16,675.8	79.20%					13,207		13,207
964	0987EA	223	Resleepering (CAP)	Werris Creek To Murulla	03/12/2018	17		Each	66.7	79.20%					897		897
964	0987EA	229	Track Strengthening / Upgrading(CAP)	Werris Creek To Murulla	03/12/2018	282		Per Metre	95.0	79.20%					21,214		21,214
<b>Sub Total</b>															<b>1,559,047</b>	<b>40,945</b>	<b>1,518,102</b>
<b>Total</b>															<b>12,676,150</b>	<b>645,490</b>	<b>12,030,660</b>

## APPENDIX E INTEREST DURING CONSTRUCTION CALCULATION

Project List				Cashflow \$,000					Total Spend \$,000	
Code	Project	Line Segment	Comm. Date	Total IDC \$	2015	2016H1	2016H2	2017	2018	Total Spend \$,000
25311	Gowrie Gates Bridge	955	23 Nov 2018	435,425	2,229	23,408	182,437	1,014,363	8,140,452	9,362,889
		<b>Total</b>		<b>435,425</b>	2,229	23,408	182,437	1,014,363	8,140,452	9,362,889
	Rate of Return – HVAU				11.83%	11.83%	7.91%	7.91%	7.91%	
	For half year/ return calculations				100.0%	50.0%	50.0%	100.0%	100.0%	
					<b>2015</b>	<b>2016H1</b>	<b>2016H2</b>	<b>2017</b>	<b>2018</b>	
<b>25311</b>	<b>Gowrie Gates Bridge</b>	955	23 Nov 2018							
	Capital Spend (\$'000)				2,229	23,408	182,437	1,014,363	8,140,452	
	IDC on Capex incurred during year				132	692	3,608	40,118	321,955	
	Previous Years Interest Capitalisation				-	140	1,052	16,903	50,825	<b>Total IDC</b>
	<b>Total Capitalised Interest</b>				<b>132</b>	<b>832</b>	<b>4,660</b>	<b>57,022</b>	<b>372,780</b>	<b>435,425</b>



**ATTACHMENT 1 HUNTER VALLEY NETWORK OPERATING  
COSTS**

**ATTACHMENT 2 CAPITAL CONSULTATION**

**ATTACHMENT 3 EVIDENCE OF ACCESS SEEKERS  
ENDORSEMENT OF CAPITAL  
EXPENDITURE (NOT FOR PUBLICATION)**

**ATTACHMENT 4 TRUE UP TEST AUDIT REPORT**

## ATTACHMENT 5 OTHER SUPPORTING DOCUMENTS

This attachment provides an index to the other confidential supporting documentation provided to the ACCC relating to the 2018 Compliance Assessment submission.

Doc ID	Item	Submission Reference
5.1	Split between MPM and RCRM; forecast MPM and RCRM; actual and forecast expenditure for the top 6 maintenance activities (spreadsheet)	Sections 1.2 and 2.4
5.2.1	10 year Asset Management Plan FY18-FY27 (spreadsheet)	Section 1.2
5.2.2	Annual Works Program and budget FY18-19 (spreadsheet)	
5.3.1	Asset strategies for major maintenance activities undertaken:	Section 1.2
5.3.2	▪ HV Ballast Cleaning Strategy	
5.3.3	▪ HV Track Reconditioning Strategy	
5.3.4	▪ HV Resurfacing Strategy	
5.3.5	▪ HV Rail Grinding Strategy	
5.3.6	▪ HV Turnout Steel Replacement Planning Methodology	
5.3.6	▪ HV Cess & Top Drain Planning Methodology	
	These strategies are unchanged from those provided for 2017	
5.4	Approved annual possession program	Section 1.2
5.5	Actual and forecast GTK and Train Km for the Hunter Valley (for Pricing Zones and non-coal) and Interstate networks	Section 1.2
5.6.1	Assurance that ARTC's procurement policies were satisfied and procurement efficient:	Sections 1.2 and 2.3
5.6.2	▪ Outline of procurement process for selection of contracts	
5.6.3	▪ Additional supporting memo to support single source procurement	
5.6.3	▪ ARTC Procurement Manual vSept18	
5.7.1	Asset disposals—underlying calculations which determine the written down value (spreadsheet):	Sections 1.2 and 6
5.7.2	▪ RAB written down values and loss on disposal	
5.7.3	▪ RAB Discount Rate Schedule 2018	
5.7.3	▪ DORC database values All Zones	
5.8.1	Demonstration of engagement with Access Holders / RCG	Sections 1.2 and 2.5
5.8.2	▪ FY18 Corridor Capital Programme – RCG	
5.8.3	▪ 2019 Possession Plan - RCG	
5.8.4	▪ Asset Risk Management Process Review – RCG	
5.8.5	▪ Asset Improvement Projects Update - RCG	
5.8.6	▪ Memo – Market, Procurement & Contracts Update – RCG	
5.8.7	▪ Capacity Fastrack Overview – RCG	
5.8.8	▪ AUR & ARTC 90 Wagon Train Trial - RCG	
5.8.9	▪ Muswellbrook Ulan Line Bridge Replacements – RCG	
5.8.10	▪ RCG Monthly Report December 2018	
5.8.10	▪ HVAU - 2018 Compliance Submission Overview	
5.9.1	Application of Schedule I methodology	Sections 1.2 and 2.2
5.9.2	▪ Mapping Schedule I overhead allocators to operating cost activities	
5.9.2	▪ Actual allocator values for Schedule I allocators	