

Our ref: MCR-16-288

Mr John Hindmarsh  
Chief Executive Officer  
Queensland Competition Authority  
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Brisbane QLD 4001

Dear Mr Hindmarsh *John*

### **Queensland Rail's Response to Submissions on Submissions and Request for Comments**

On 15 January 2016, the Queensland Competition Authority (QCA) called for "submissions on submissions" received in response to the QCA Draft Decision on Queensland Rail's Draft Access Undertaking (2015DAU). The QCA subsequently issued a "Request for Comments" paper specifically to seek views on particular matters raised in the submissions.

In this regard, please find attached Queensland Rail's response to the QCA's request including supporting documentation.

Queensland Rail would welcome an opportunity to work with the QCA and key industry participants to review any matters in order to facilitate an expeditious approval of Queensland Rail's 2015DAU.

Please be aware that aspects of this submission are considered commercial in confidence and should not be released by the QCA without the formal consent of Queensland Rail.

If you have any questions in relation to Queensland Rail's response, please do not hesitate to contact Mr Douglas Jasch, Queensland Rail's Manager Policy and Regulation on (07) 3072 0544 or [douglas.jasch@qr.com.au](mailto:douglas.jasch@qr.com.au).

Yours sincerely

  
**Helen Gluer**  
Chief Executive Officer

*HG* March 2016

# Submission – Queensland Rail’s Draft Access Undertaking 1 (2015)

Response to Queensland Competition Authority’s  
Comments Paper

March 2016



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## 1 Introduction

Queensland Rail makes this submission in response to the QCA's Request for Comments paper dated 19 January 2016. The matters referred to in this submission are in addition to Queensland Rail's past submission to the QCA, lodged on 24 December 2015.

This submission addresses specific matters raised in the QCA's Request for Comments paper. Due to the limited time available to make this submission, Queensland Rail has focused on a number of key relevant issues. Consequently, please note that if this submission does not address a matter raised by stakeholders in submissions it does not mean that Queensland Rail agrees with or accepts that matter.

Following Queensland Rail's submission on the QCA's draft decision and this unprecedented 'submissions on submissions' process, Queensland Rail expects that the QCA will need to make substantial and material changes to its draft decision, thereby making it necessary for a further draft decision to be issued.

Queensland Rail remains concerned the QCA's draft decision does not create the platform for an efficient negotiate-arbitrate framework to function, nor does it appropriately balance the interests of Queensland Rail and access seekers. Queensland Rail considers the QCA's assessment of risk and uncertainty is one-sided, and has failed to take into account Queensland Rail's commercial interests.

The direction proposed by the QCA is inconsistent with the requirements of the QCA Act and good regulatory practice and the QCA has failed to apply sound economic reasoning in the way it has determined the proposed Reference Tariffs for the West Moreton Network, including how relevant network assets are valued and costs are allocated between different traffics.

Further, the QCA's draft decision sets new precedents which raise concerning issues for other regulated services providers. It signals the regulator's willingness to reopen previously settled matters such as asset valuation, and ignore the service provider's legislated entitlement to recover at least its efficient costs. The fact that Aurizon Operations' submission explicitly seeks to have the QCA indicate that the regulator's decisions in relation to Queensland Rail's 2015DAU are not benchmarks for other coal networks evidences this concern.<sup>1</sup>

Queensland Rail remains firmly of the view that the approach, methodologies and frameworks as set out in the 2015DAU submitted by Queensland Rail are appropriate and accords with the requirements of the QCA Act.

Queensland Rail submits that the QCA must reconsider its position in order to satisfy its obligations under the QCA Act.

## 2 Submissions on submissions process

On 15 January 2016, the QCA notified Queensland Rail simply that it was "*seeking further comment on matters raised in the submissions*" received on the QCA draft decision by Friday, 5 February 2016 (but subsequently extended to 14 March 2016). The QCA has described this process as a "submissions on submissions" process.

This "submissions on submissions" process:

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<sup>1</sup> Aurizon Response to Queensland Competition Authority Draft Decision on the Queensland Rail 2015 Draft Access Undertaking, 22 December 2015, p.22

- is unprecedented in our experience;
- adds further delay to an already protracted process for the approval of Queensland Rail's initial access undertaking;
- fails to identify what issues the QCA expects Queensland Rail to comment on – the Request for Comments states that *“interested parties should rely on their own analysis to determine whether there are additional matters on which they wish to comment”*. Given that the QCA is undertaking a formal investigation under the QCA Act, the QCA is obliged to clearly articulate all of the matters on which it requires further information for the purpose of its investigation;
- does not alleviate the QCA's obligation to consider for itself what is relevant in respect of the submissions; and
- does not, in any event, remove the necessity for a further draft decision by the QCA given the issues identified with the existing draft decision.

Queensland Rail also notes that, notwithstanding the grant of a short extension of time to respond, the QCA has given Queensland Rail limited time to review and comment on all of the submissions. The time period given for this response also directly overlaps with the timeframe for other submissions required by the QCA from Queensland Rail including a submission on the financial model used by the QCA to re-calculate and materially reduce the proposed Reference Tariffs.

## 3 Allocation of Common Costs

### 3.1 Train path constraints through the Metropolitan Network

*“The Draft Decision said [w]e propose to cap coal traffics' share of fixed costs (such as common network assets, fixed maintenance and operating costs) based on contracting restrictions associated with the Metropolitan network’ (QCA Draft Decision, p. 143). In response, Queensland Rail said that there was no legally binding train constraint of 87 paths through the Metropolitan network for coal services (Queensland Rail, Annexure 8).<sup>2</sup>*

*Stakeholders are requested to make further comments on this matter.”*

As Queensland Rail has previously submitted and demonstrated there is no 87 train path constraint. It is unclear why the QCA continues to raise this as an issue and what relevance further submissions on that topic from any other party would have. In any event, as the QCA has sought further submissions, Queensland Rail has identified a number of flaws in the QCA's approach to the hypothetical 87 train path constraint.

#### Allocation of common costs

The QCA's proposed approach to cost allocation will not allow Queensland Rail to recover its efficient costs and consequently effectively seeks to force Queensland Rail (and ultimately its owner (the State)) to subsidise rail access for West Moreton Network end users.

Underpinning much of Queensland Rail's initial response to the QCA draft decision was a discussion on the way in which costs have been allocated in order to determine Reference Tariffs for the West Moreton Network.

Queensland Rail's submission on the QCA draft decision sets out clearly the business' proposed approach to cost allocation. This proposed approach was a pragmatic one, which

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<sup>2</sup> Unless otherwise specified, all document references are to the named stakeholder's December 2015 submission on the QCA's October 2015 Draft Decision.

sought to align with proposals from earlier QCA draft decisions, whilst recognising the significant recent change in network utilisation. Queensland Rail remains of the view that the approach proposed in the 2015DAU is appropriate.

Queensland Rail believes that, given the fundamental importance of these matters, it is instructive to revisit some core economic and regulatory principles. It is submitted that doing so provides a basis from which to both review the QCA's draft decision and guide how it should be re-framed.

At its core, regulatory cost allocation requires an appropriate allocation of shared costs between different network users, which is:

- *efficient*, in that no user should pay less than incremental cost, nor more than stand-alone cost, and where shared/common costs need to be recovered from multiple users, this should be done in a way which least impacts demand;
- *fair*, in that users generally should pay in proportion to the benefit they derive from the shared network assets; and
- *complete*, in that the allocation permits the business to recover at least its total efficient costs, including a relevant return on capital.

For the West Moreton Network, the jurisdiction of the access undertaking covers *all* below-rail services. The issue is one of determining the allocation of shared network costs between (broadly) two *regulated* services, coal and non-coal transport, though where only one has a regulator-approved Reference Tariff.

This distinction is important. The QCA's draft decision infers that it only regulates coal services using the West Moreton Network, and the focus is entirely on the share of costs that should be allocated to coal. What this approach ignores is that the declaration under s. 250 of the QCA Act and the undertaking covers all services on the West Moreton Network, notwithstanding the undertaking has proposed (and the QCA previously has agreed to) setting a Reference Tariff only for coal-carrying services.

The QCA cannot simply ignore the residual of costs that it proposes not to allocate to coal, and the way in which any cost allocation approach impacts on non-coal services.

Further, Queensland Rail remains concerned that the approach proposed by QCA in its draft decision, and various alternatives proposed by users, do not satisfy fundamental requirements for regulatory cost allocation, and continue to be based on an incorrect understanding of the West Moreton Network.

## Fundamental premise of cost allocation

The QCA has proposed that certain costs – specifically capital costs relating to the opening asset value and fixed maintenance costs – be allocated to coal users based on the number of paths coal users are able to contract to use, as a proportion of total network capacity. Largely, this approach seems predicated on the QCA's assessment that sharing costs in this way is "fair".<sup>3</sup>

To determine this, the QCA based its allocation on a supposed constraint on the number of

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<sup>3</sup> Refer, for instance, Queensland Competition Authority (2015), *Draft Decision: Queensland Rail's 2015 Draft Access Undertaking*, October, p.184: "We consider our allocation of that expenditure to coal services **fair** and reasonable, as it makes coal services pay for the portion of the expenditure reflecting the part of the West Moreton network they can access – that is, an allocation based on the relative train paths available for contracting by coal services."

Queensland Rail notes that in various other places the QCA makes claims that its cost allocation approach avoids inefficient price discrimination (p.138), and prevents cross-subsidisation (p.140) – but no evidence is provided to support these claims. For instance, an efficiency argument to be promoted, it would need to be supported by demonstration of the way in which the cost allocation approach impacts on current/future demand. For cross-subsidisation to occur, it would need to be demonstrated that one user is paying more than its stand-alone cost, and another less than incremental cost.

coal train paths able to be contracted by coal through the Metropolitan Network. The QCA suggested that Queensland Rail could contract only for 87 train paths through the Metropolitan Network, and further that 10 train paths were consumed by coal services which did not traverse the West Moreton Network, leaving 77 paths<sup>4</sup> as the “allocator” for these costs. Significant components of network costs were then allocated using the fraction 77/112.

As previously submitted, there is no 87 train path constraint.

In any case, a fundamental premise for regulating common-user networks is that users should share in the benefits offered by economies of scale, avoiding incentives for inefficient bypass. This is the primary benchmark for any assessment of a cost-allocation approach; does it provide an outcome where the user is better-off sharing network costs with others, than the alternative of bypassing the network altogether? As described by NERA Economic Consulting in a report for the UK Office of the Rail Regulator:

*“... this approach ensures that all users benefit from access to a common network, in the sense that they do not pay any more than they would have to pay for their own dedicated network. Neither do they make anyone else worse off by accessing the network (since they cover at least their incremental cost).”<sup>5</sup>*

The nature of cost allocation is that one user can always be made better off by allocating cost elsewhere, but simply reducing the share of costs allocated to one party does not imply any gain in efficiency.

It is important that the cost allocation must be complete; the service provider should be afforded a reasonable opportunity to recover at least 100% of its efficient costs. Just as one user benefits from sharing common network costs with others, the service provider should not be penalised by a cost allocation approach which denies it from recovering costs that, absent a shared network use, it would be allowed to recoup.

### **Some effects of QCA’s proposed cost allocation**

Cost allocation is relevant to the QCA's draft decision in two main ways:

- the value of Queensland Rail's West Moreton Network assets is allocated to coal and non-coal traffics, and
- fixed and variable operating and maintenance costs are allocated between coal and non-coal traffics.

Figure 1 shows how the QCA has adjusted the West Moreton Network asset value from that proposed by Queensland Rail in the 2015DAU, which was essentially a roll-forward of the asset value approved by the QCA in the 2008AU for setting Reference Tariffs.

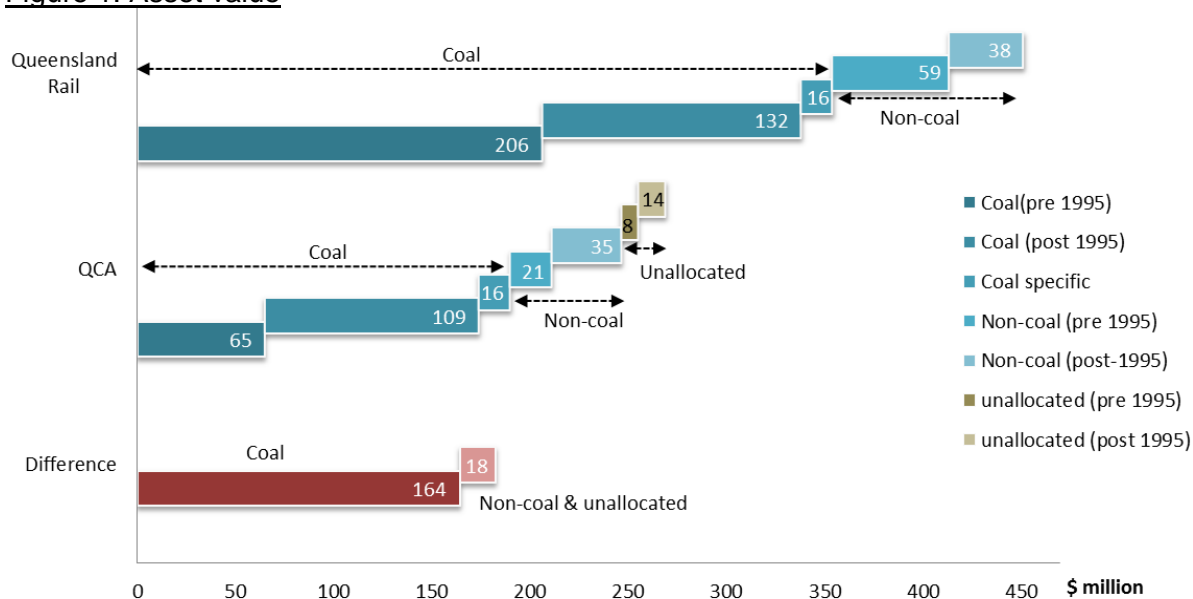
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<sup>4</sup> [REDACTED]

<sup>5</sup> NERA (2001), *Regulatory approaches to cost allocation: a report for ORR*, April, p.4



Figure 1: Asset value



This analysis shows clearly:

- the magnitude of the QCA's valuation adjustments - the regulator has effectively written-off approximately 40% of the West Moreton Network asset value by rejecting the asset value it previously approved, which provides context to Queensland Rail's decision to withdraw the 2014 DAU and the proposal within that DAU to back-date the application of Reference Tariff for the West Moreton Network (which is discussed further, below);
- that the way in which the QCA has adjusted the asset base, and changed the basis for allocating these capital costs, has a disproportionately large benefit to coal users - more than 90% of the reduction in West Moreton Network asset value is attributed to coal traffics; and
- a component of the asset base remains unallocated that is, the value of these assets is not attributed to either coal or non-coal users, meaning that Queensland Rail is unable to recover these costs.

Based on data from the QCA draft decision and Queensland Rail submission, Queensland Rail has estimated that around \$22 million in asset value is unallocated to any user. Out of the 112 available train paths, the QCA suggested Queensland Rail could contract only for 87 train paths through the Metropolitan Network, and that 10 train paths were accounted for by coal services which did not use the West Moreton Network. This approach leaves costs unassigned for 10 train paths (i.e. 87-77), where the unallocated costs are calculated using a 10/112 fraction.

The QCA's cost allocation approach also results in a share of future capital, maintenance and operating costs being unallocated to any network user. Table [1] provides an estimate of the extent of costs unallocated under the QCA's methodology, identifying more than \$22m in future capital, maintenance and operating costs, over the term of the 2015DAU, as unassigned.

Table 1: Unassigned operating, maintenance and capex costs due to QCA draft decision

Cost category	QCA Position on total costs (\$ million)	Value of costs unassigned (\$ million) due to QCA treatment of coal train originating from Metropolitan network
Capex (five years)	144.2	12.9
Maintenance costs – fixed component (five years)	77.4	6.9
Operating costs – fixed component (five years)	30.3	2.7

Queensland Rail's proposed approach to cost allocation addresses this problem of unassigned costs, by using network demand as the allocator for common costs (costs which are specific to particular traffics are allocated directly to them).

Queensland Rail's proposed approach is uncontroversial and consistent with methodologies applied in other jurisdictions. For instance, the Victorian Rail Access Regime provides that costs are allocated:

*“... to passenger and freight **in proportion to the respective usage by each traffic** on the relevant line types, where the proportionate usage should be a weighted average of the GTK share (ie, passenger or freight GTK divided by total GTK on that rail line type) and the TK share (similarly, passenger TK or freight TK divided by total TK on that rail line type), with the weights being 50 per cent GTK and 50 per cent TK.”<sup>6</sup> (emphasis added)*

*“All other costs...are to be allocated to passenger and to freight **in proportion to the use of each type of traffic on the network as a whole**, again based on a weighted average of the GTK share and the TK share ...”<sup>7</sup> (emphasis added)*

Similarly, a review of ARTC's cost allocation method undertaken for the Australian Competition and Consumer Commission (ACCC) found that:

*“Where costs cannot be directly allocated common costs are pooled into specific cost centres with common cost characteristics before being allocated out to the specific business units, products etc on the basis of an appropriate allocation driver that is consistent with the attributes of the costs and **the demand of the end users** ...*

*“... the sum total of cost allocated should equal the costs incurred by the business.”<sup>8</sup> (emphasis added)*

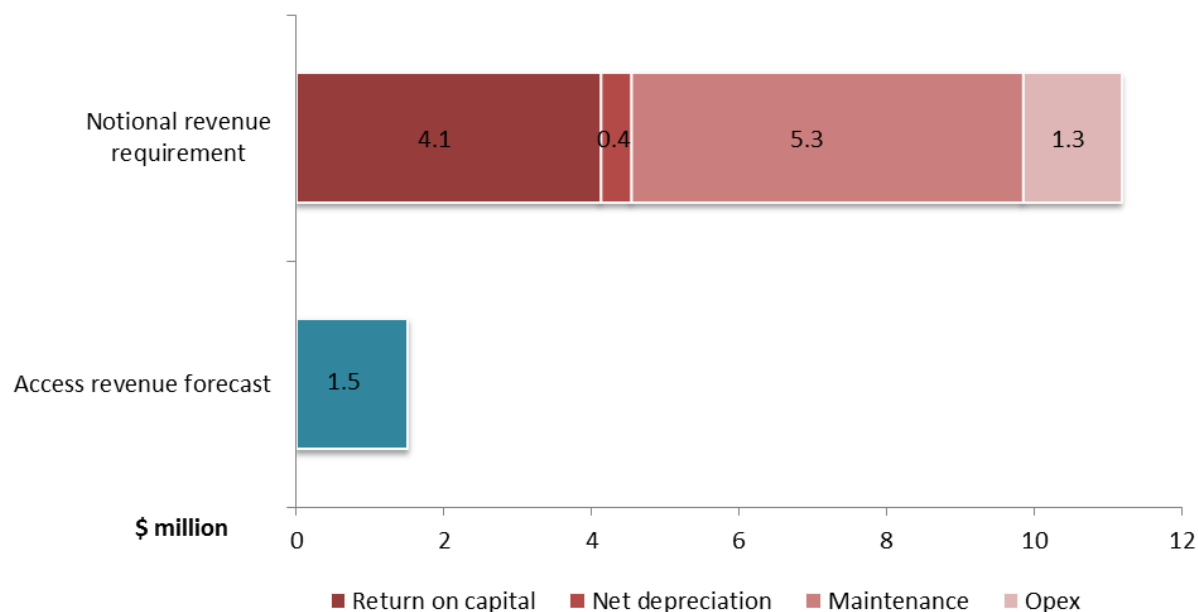
Returning to the matter of costs allocated to non-coal traffic, Queensland Rail's concern is that the magnitude of costs nominally assigned to non-coal traffic is significantly greater than what can be recovered through the access charges attributable to these users. Figure [2] depicts a notional ceiling revenue limit for non-coal services on the West Moreton Network. It uses the residual of QCA-determined capital and operating costs not allocated to coal, and compares these costs to the actual revenue expected to be generated from non-coal access.

<sup>6</sup> Essential Services Commission (2009), *Rail Access Pricing Guideline v.2.0*, June, p.18, emphasis added

<sup>7</sup> *Ibid*

<sup>8</sup> PwC (2008), *Review of ARTC Operations and Maintenance Costs and Cost Allocation Method*, report for the ACCC, April, p.19-20, emphasis added.

Figure 2: Non-coal revenue (2015-16 notional and expected)



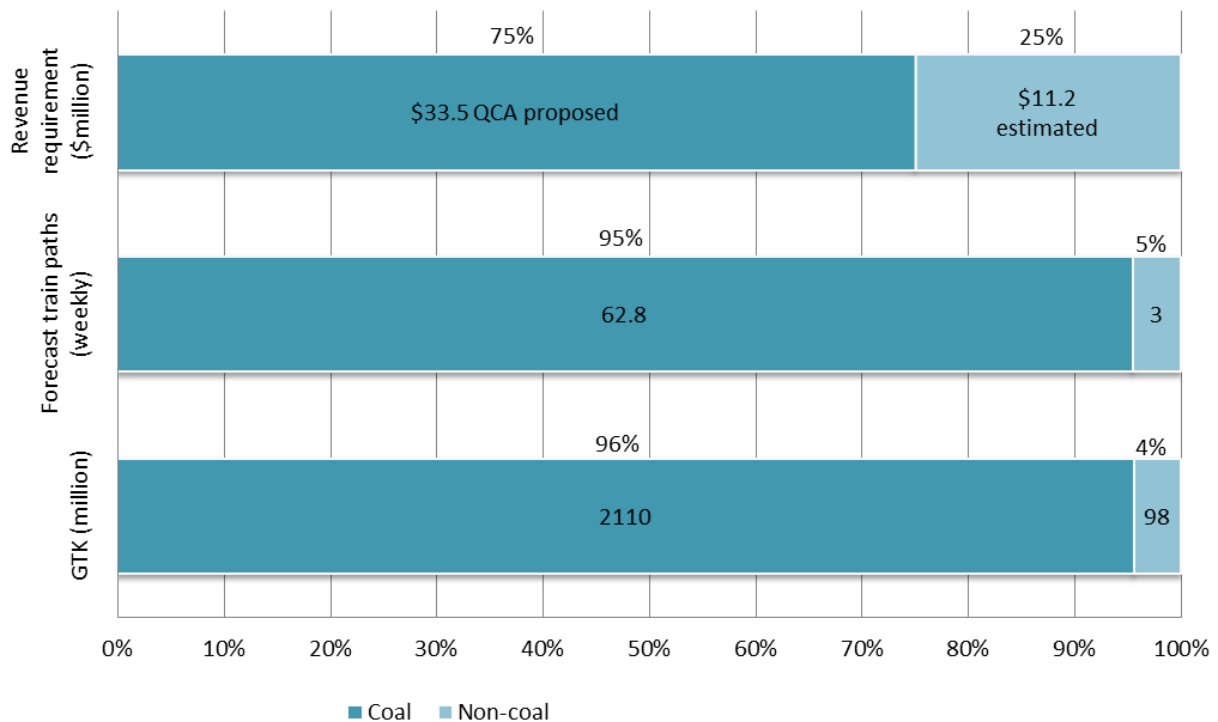
This analysis suggests a shortfall of in excess of \$10 million in 2015-16, which effectively is the subsidy that the QCA's draft decision requires Queensland Rail (and its owner, the State) to bear.

Queensland Rail's 2015DAU submission provides details on anticipated utilisation of the West Moreton Network. Since the now withdrawn 2013DAU was submitted there have been significant reductions in overall network utilisation, and in particular pronounced reductions in non-coal traffics.

The cost allocation approach proposed by Queensland Rail in the 2015DAU incorporated some modifications from previous draft access undertakings, in part to cater for the change in expected network utilisation. However, a fundamental point needs to be reinforced - all users benefit from the way in which Queensland Rail has proposed to allocate costs, in that they are better off sharing costs than having to singularly cover the stand-alone costs attributable to their own demand.

The approach proposed by the QCA, however, disproportionately skews this allocation in favour of coal traffics. Despite being responsible for 95% of forecast train paths, and 96% of the forecast freight task (as measured by gtk), the coal Reference Tariff covers only about 75% of Queensland Rail's West Moreton Network costs, after adjustment by the QCA (Figure [3] refers, below).

Figure 3: Network utilisation, 2015-16



Some stakeholder submissions are seeking to compound this bias, arguing that the QCA should further reduce the share of costs allocated to coal. A further reduction is necessary, it is claimed, to make coal mines on the West Moreton Network "competitive".<sup>9</sup> Such suggestions are fundamentally flawed.

For instance, New Hope Corporation has submitted that fixed costs should be allocated on the basis of the higher of either forecast network utilisation, or contracted capacity, as a share of total capacity.<sup>10</sup>

This allocation method would see Queensland Rail recover its costs only where demand/contracted volumes were exactly equal to network capacity. In every other scenario, Queensland Rail would recover from users less than its efficient costs. This would require a complete re-think of the risk characteristics of the West Moreton Network, and a significantly higher rate of return than that proposed by Queensland Rail, and agreed to by the QCA in its draft decision.

It also would introduce a fundamental inconsistency in the treatment of spare capacity for Queensland Rail, relative to other comparable regulated businesses, including:

- Aurizon Network - spare capacity on the network is recovered through Reference Tariffs based on a lower level of (contracted) demand<sup>11</sup>
- Urban Water Utilities - the QCA assesses whether distributor-retailer authorities in south east Queensland are recovering no more than their maximum allowable

<sup>9</sup> New Hope Corporation Limited (2015), *Submission on QCA's 2015 Draft Decision on Queensland Rail's 2015 Draft Access Undertaking* (letter), p. 1

<sup>10</sup> New Hope Corporation Limited (2015), *Submission on Queensland Rail's 2015 Draft Access Undertaking*, p.7

<sup>11</sup> For instance, according to Aurizon Network Development Plan (2015, p.13), the Blackwater and Moura systems have uncommitted capacity of varying levels throughout their section lines. Further, the Blackwater system interacts with the North Coast Line (NCL) which is capacity constrained. A number of issues confront the line, which restrict the line's ability to support additional capacity from other lines/sections with excess capacity, but which remain 'artificially' constrained because of NCL. Despite the current excess capacity on certain section of Aurizon Network's rail lines, under its regulatory arrangements, is allowed to recover the efficient costs associated with the entire system - regardless of whether capacity is (or is capable of being) fully utilised/contracted.

revenue from forecast water and wastewater demand, irrespective of whether there is spare capacity in those networks,<sup>12</sup> and

- bulk water - the costs relating to spare capacity in the Gladstone Area Water Board's Awoonga Dam are effectively "loss capitalised" and carried forward to be recovered from future increases in demand.<sup>13</sup>

The matter of spare capacity in the West Moreton Network is more properly, if anything, one of asset optimisation. Queensland Rail remains of the view, and the QCA's own technical advisor has confirmed,<sup>14</sup> that the West Moreton Network is appropriately sized for the forecast network demand. There is no "smaller" asset configuration that could be adopted as the basis of an optimised network configuration and valuation. Given this, the matter is one of how to design a framework for the recovery of network costs, including any spare capacity element.

Finally, it is not the role of the regulator to determine a below-rail access charge which makes coal mines "competitive", any more than this obligation should be enforced upon an above rail provider, or downstream port/terminal operator.

New Hope Corporation refers to the QCA's statement in its Draft Decision on the Aurizon Network access undertaking (Volume 3, page 134), where the QCA states "*market conditions – as the CQCR continues to face globally competitive conditions, a balance has to be struck between preserving individual stakeholders' business interests and promoting the public interest (i.e. ensuring the CQCN's medium-to long-term competitive position in global coal markets)*", and states that this should be equally applicable to the West Moreton Network.<sup>15</sup>

In giving consideration to the factors identified by s. 138(2) of the QCA Act, the QCA must have regard to the objects of the QCA Act. Giving effect to the object of Part 5 does not permit the QCA to have regard to impacts on upstream and downstream competition that are not a direct consequence of a failure "*to promote the economically efficient operation of, use of and investment in*", Queensland Rail's infrastructure. Market factors such as global coal prices are in no way related to or influenced by the economically efficient use of or investment in rail infrastructure, and are therefore not a matter which the QCA is entitled to take into account.

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<sup>12</sup> Queensland Competition Authority (2014), *Long Term Regulatory Framework for SEQ Water Entities – Position Paper*, p.30, 42, 45; Queensland Competition Authority (2014), *Financial Capital Maintenance and Price Smoothing*, p.31

<sup>13</sup> Queensland Competition Authority (2002), *Gladstone Area Water Board - Investigation of Pricing Practices, Final Report*. The QCA said:

"...augmentation may result in a significant level of excess capacity being present for a considerable period of time. For example, to meet expected growth in demand, GAWB has raised Awoonga Dam to increase its safe yield from 49,400ML to 87,900ML, resulting in excess capacity of about 35 to 40 per cent in the initial years.

GAWB has responsibility for the management of supply and is responsible for identifying appropriate options for capacity augmentation. Any augmentation should provide the least cost solution for meeting reasonably envisaged demand, and any resulting surplus capacity should be legitimately incorporated into the asset base. However, GAWB should carry the costs of any excess capacity installed over and above that necessary to provide the least cost option for meeting anticipated demand.." p.2

Queensland Competition Authority (2015), *Gladstone Area Water Board Price Monitoring, 2015-2020 – Draft Report*, p.49. The QCA said, "In the 2005 and 2010 reviews, we recommended that prices be calculated to recover costs over a 20-year planning period. A timeframe of this length dealt with any efficient excess capacity and provided consistent and stable pricing signals given the lumpiness of water infrastructure investments." p.49

<sup>14</sup> The QCA commissioned two West Moreton network asset valuations from B&H; one in 2014 and the second in 2015, responding to Queensland Rail's 2015 DAU. In both reports, asset value estimates are largely the same, despite material change in volume forecasts between the 2013 DAU and the 2015 DAU. The adjustments made in the 2014 B&H report relate mostly to unit costs and other parameter estimates. B&H largely did not exclude assets on the basis of surplus or excess network capacity. The 2015 B&H report largely used the same asset configuration, notwithstanding a significant reduction in network utilisation evident at that time.

<sup>15</sup> New Hope Corporation Limited (2015), Submission on QCA's 2015 Draft Decision on Queensland Rail's 2015 Draft Access Undertaking (Volume 1 p. 5)

The QCA Act contemplates that if “*the economically efficient operation of, use of and investment in*” Queensland Rail’s relevant rail transport infrastructure is promoted, then that will have the effect of promoting “*effective competition in upstream and downstream markets*”. It is not the function of the QCA, the QCA Act or an access undertaking to promote “*effective competition in upstream and downstream markets*”.

The QCA Act does not require or permit the QCA to act with the purpose of promoting the viability of a particular commodity. Nor can the QCA Act be used to have an access provider such as Queensland Rail subsidise or underwrite the financial performance of private sector mining entities.

New Hope Corporation also refers to the risk of falling demand on the West Moreton network, and notes that “*material falling demand has since become a reality with the closure of Wilkie Creek*”. With respect, no evidence has been presented that rail access tariffs contributed to the decision to close Wilkie Creek, and it cannot be suggested that this is the case, given market conditions generally.

There clearly is a symbiotic relationship amongst all participants on a shared-use network, but to require one party - the below-rail access provider - to subsidise costs for privately-owned coal mines is not appropriate.

### 3.2 Allocation of fixed/common costs

*New Hope (vol. 2, pp. 7-9), Aurizon (pp. 24-25) and Queensland Rail (pp. 39-43) had differing views on the treatment of fixed costs (i.e. fixed operating and maintenance costs) of the West Moreton network.*

*Stakeholders are requested to comment on these submissions.*

In Queensland Rail’s 2015DAU, Queensland Rail allocated the forecast forward looking costs for the West Moreton Network between coal and non-coal services on the following basis:

- Maintenance costs to be allocated according to the forecast gtk usage of the network;
- Operating costs to be allocated according to the forecast train path usage of the network; and
- Future asset renewal capex costs to be allocated according to the forecast train path usage of the network. Queensland Rail did not forecast any capacity enhancement capex costs over the term of the 2015DAU.

This position ensures that those who use the service will pay for the service. Further, this allocation approach for maintenance and operating costs is consistent with the methodology that was used in establishing the 2010 reference tariffs, and is also consistent with the approach recommended by the QCA in its 2014 draft decision on Queensland Rail’s 2013DAU proposal. Queensland Rail agrees with the QCA’s previous decision and draft decision and considers that this is the most appropriate approach. As noted earlier, it is also consistent with the Victorian Rail Access Regime.

However, in its draft decision on the 2015DAU proposal, the QCA moved away from its own precedent and proposals, recommending a significant shift in the approach for allocating these forward looking costs to coal and non-coal services, instead breaking each cost category separately into fixed and variable elements:

- the variable costs being allocated according to forecast usage, based on forecast gtk; and

- the fixed costs being allocated based on the capacity that is available for contracting by that group of services.

Queensland Rail does not accept the QCA's new methodology, which appears to be based on a high level desktop assessment. Queensland Rail maintains that the 2015DAU is based upon an appropriate cost allocation methodology.

In considering the appropriateness of the QCA's new methodology, Queensland Rail both undertook its own review of the QCA's cost allocation methodology, and commissioned independent expert economic advice from Synergies Economic Consulting and expert engineering advice from Everything Infrastructure (refer Attachments 2 and 3). The expert review was a standalone analysis of the QCA's methodology, which was found to be overly simplistic and seriously flawed.

Given the inappropriateness of the QCA's new methodology, Queensland Rail considers the 2015DAU's approach should be adopted as it is consistent with regulatory precedent and is an effective and proven cost allocation approach.

For example, a categorisation of costs only into fixed and variable elements such as proposed by the QCA will not effectively recognise that the service requirements of coal and non-coal services are very different:

- Non-coal services are forecast to run around 3 return services per week leading to a total average gross tonnage across the route<sup>16</sup> of less than 300,000 tpa;
- Coal services are forecast to run 62.8 return services per week with total net tonnes of 6.3mtpa and an average gross tonnage across the route of greater than 11.254mtpa.

As such, the general standard to which the infrastructure must be maintained in order to reliably operate the forecast coal services will be quite different to what would be required only to operate the non-coal services.

At a minimum a categorisation of costs that better reflects these differences would be necessary in order that all costs that are incremental to each type of service are properly allocated to that group of users (whether these costs are fixed or not).

However, if the QCA does not accept the methodology for allocation of maintenance and operating costs that it used and approved in establishing the 2010 reference tariffs, included in the QCA's 2014 draft decision and was proposed in the 2015DAU, Queensland Rail and its independent expert consultants consider that the QCA's current proposal needs to be modified to include the following three categories:

- **Fixed costs common to the network** - These costs would be incurred even if only a minimal number of services (passenger and non-coal freight) were to utilise the network and do not change with tonnage or time.
- **Fixed costs to operate coal services** - These costs are triggered by the need for the network to operate coal services with the tonnage hauled across the network currently exceeding 6mtpa; and
- **Variable costs** - Costs that vary directly with gross tonne kilometres (gtk).

The QCA's methodology as it currently stands does not align costs with their cost drivers and is overly simplistic. The combination of the QCA's cost categorisation and cost allocation approaches means that Queensland Rail would not be permitted to recover its efficient costs of providing the service under the QCA's 2015 draft decision methodology.

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<sup>16</sup> Average gross tonnage is determined as route gtk/route km. Actual gross tonnage will be higher on the more heavily utilised section of track from Rosewood to Toowoomba, and lower on the lesser utilised sections of track to the west of Toowoomba.

Queensland Rail considers the approach in the 2015 draft decision to be fundamentally flawed.

## Cost categorisation approach

In order to allow costs to be allocated to users in a way that more closely reflects the drivers of those costs, Queensland Rail has examined its forecast forward looking costs in order to categorise them into the following components:<sup>17</sup>

- **Common costs**, which are those costs that are not attributable to a single user of the network, or which would be incurred simply to maintain the infrastructure in a steady state on the expectation of a minimal number of regular train services utilising the network. These costs are fixed in nature;
- **Coal service fixed costs**, which are the fixed costs of maintaining and renewing the West Moreton Network that are in excess of the common cost, and which are triggered by the need for the network to be able to operate coal services with a tonnage profile of greater than 6mtpa. Whilst over the long-run, these costs might be viewed as variable, over the period for which costs are forecast, these costs would effectively be fixed. These fixed costs come about as the maintenance costs are not able to be continuously broken into unit costs over the tonnage profile. As such, there ends up being a “lumpy” cost profile as more tonnages are added to the network, and as each tranche of costs is triggered, these increased costs become a fixed cost; and
- **Variable costs**, which are those costs that respond to changes in the tonnage profile within the cost forecasting period.

## Maintenance Costs

### Methods for Estimating Common Costs

As described above, common maintenance costs are those that are required to be incurred even if only a minimal number of regular train services were to utilise the network.

Queensland Rail has reviewed the QCA draft decision approach and has developed an indication of the likely level of common costs. To develop this, Queensland Rail has conducted two analyses, each with its own estimate of these costs. Of the methods, one is conducted using a bottom-up methodology and one is conducted using a top-down methodology. The two methodologies are as follows:

- **A top down approach** which seeks to predict an indicative estimate of the common costs that would need to be incurred in order to provide for minimal tonnage throughput based on a review of the **historic** costs of maintenance on the range of routes provided by Queensland Rail, including a number which carry only a minimal amount of tonnage; and
- **A bottom-up methodology** whereby Queensland Rail has developed a revised indicative maintenance budget which sets out the costs that it expects it would incur if it were only maintaining the network for a minimal number of trains.

### Common Costs – Top-down approach

The top-down approach seeks to derive a trend estimate for rail maintenance works on the Queensland Rail network. This can provide an indicative estimate of the maintenance required at different tonnage levels, based on the tonnage/maintenance cost relationship that exists for each rail network across Queensland Rail’s network.

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<sup>17</sup> Note, the rationale for breaking the costs into these components is discussed in detail in Synergies’ report: A Review of Queensland Rail’s Cost Allocation Methodology



In order to inform this analysis, Queensland Rail has plotted the cost of maintenance for each of its networks (\$/track kilometres average) over the number of gross tonne kilometres (gtk) per track kilometre. The measure of gtk per track kilometre gives us a relatively standardised measure of gross tonnage, subject to the assumption that the traffic travels the entire length of the route.

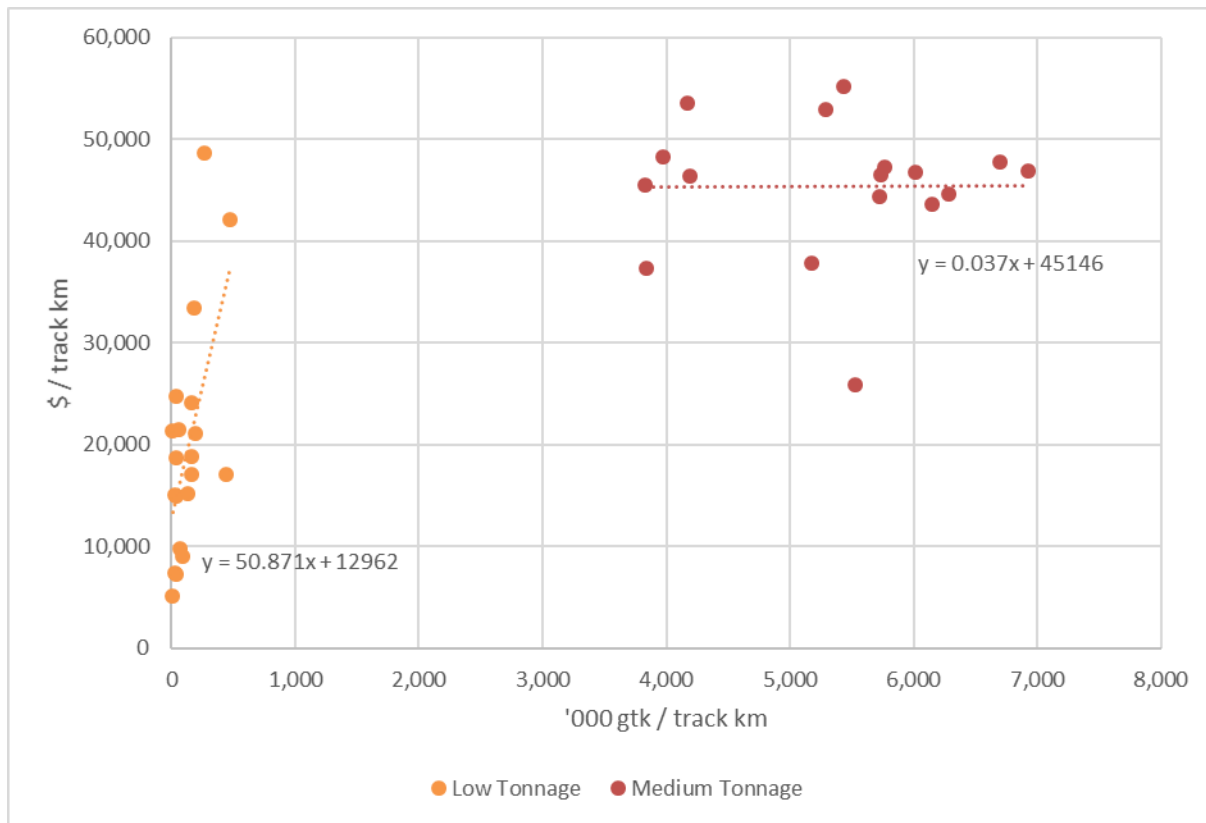
Data that was used to populate the analysis is the historic actual maintenance costs, gross tonne kilometres and track length for the following networks within Queensland Rail's network:

- Mt Isa;
- North Coast Line (NCL) North;
- NCL South;
- Tablelands;
- Central West;
- Maryborough;
- South West;
- West Moreton; and
- Western.

While some of these networks carry significantly more tonnage than others, all networks were originally built as mixed use networks and have been progressively maintained and renewed to meet user requirements. None would be classed as carrying high tonnage (for example, the West Moreton Network carries the highest tonnage of Queensland Rail's routes at just over 6mtpa. This contrasts with Aurizon Network's systems in central Queensland which carry up to 100mtpa.)

For all networks, maintenance data from FY11 to FY15 was utilised. This provides approximately 38 data points for the analysis to follow.

**Figure 1 Maintenance Cost curves for Queensland Rail’s networks – linear trendline**



From the plot in Figure 1 above, there are two clearly observable clusters of maintenance costs, which represent both low tonnage and medium tonnage networks (note, as discussed above, none of Queensland Rail’s networks would be classed as high tonnage). The medium tonnage cluster contains the observations from the Mt Isa, NCL North and South and the West Moreton Networks. Queensland Rail’s remaining networks are in the low tonnage cluster.

We note that there is significant variability in Queensland Rail’s maintenance costs that cannot wholly be explained due to tonnages, indicating that there are a range of factors apart from tonnage that impact on the required maintenance. This will include a range of local factors, for example such as track condition, climatic conditions, weight of load per train, and so on.

However, there is a clear relationship between maintenance costs and tonnage. Figure 1 separately shows the trend line relationship between tonnage and maintenance costs for the low and medium tonnage clusters. This indicates that:

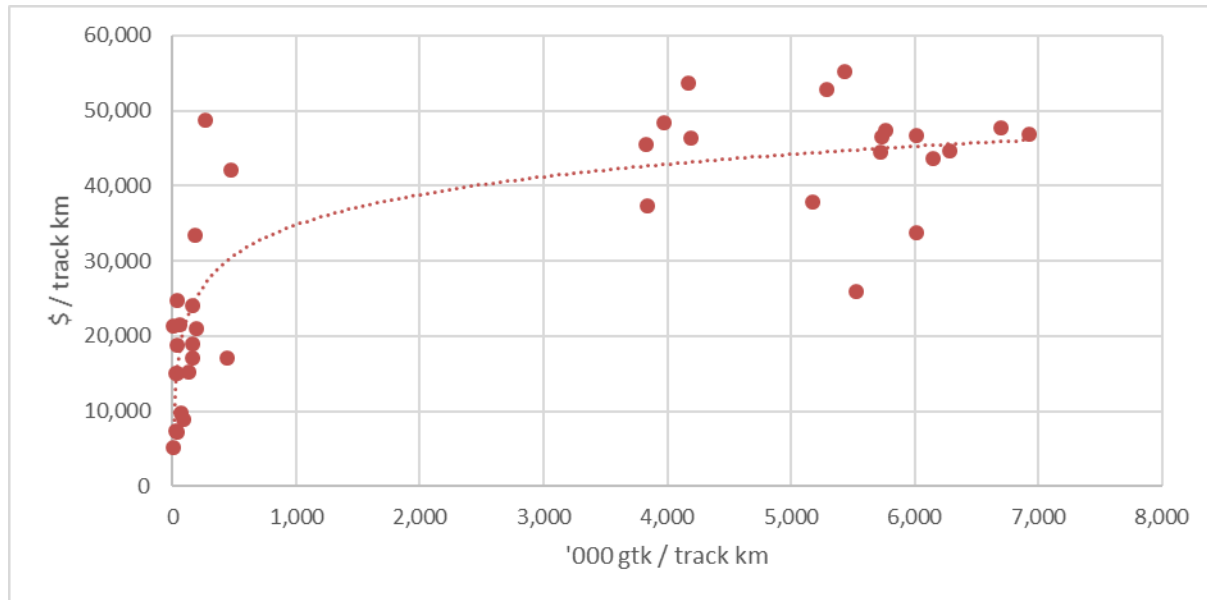
- there is a minimum base cost associated with keeping the rail infrastructure operational;
- the marginal cost of tonnage increases in a low tonnage network is quite high; and
- on higher tonnage networks, the fixed maintenance costs are significantly higher, but with a lower marginal cost of tonnage increases.

An alternate method of assessing the relationship between tonnage and maintenance costs is to develop a logarithmic trend line that is most suited to Queensland Rail’s historic data. A

logarithmic trend line is often used in studies<sup>18</sup> of the relationship between rail maintenance costs and tonnage, reflecting that an efficient maintenance program should show a decreasing marginal cost as tonnages increase, due to efficiencies of scope and scale.

While there is insufficient Queensland Rail data to confirm whether the logarithmic trend line will be accurate at all tonnage levels, as can be shown from Figure 2, the resulting trend line is not dissimilar to the linear trend lines at the tonnage levels that apply for the individual clusters.

**Figure 2 Maintenance Cost curve for Queensland Rail’s networks – logarithmic trendline**



Queensland Rail has used this data to estimate an indicative common cost, both using the linear trendline for the low tonnage cluster, and using the logarithmic trendline. Both trendlines indicate a similar common cost for maintenance for the West Moreton Network, as shown in Table 1 below.

**Table 1 Forecast common costs, using a top-down methodology**

Origin/Destination	'000 GTK / track km	Modelled \$ / track km (logarithmic model)	Modelled \$ / track km (linear model)	Total Modelled Cost (logarithmic model)	Total Modelled Cost (linear model)
Rosewood – Toowoomba	491	\$30,628	\$37,939	\$5,070,981	\$6,281,511
Toowoomba - Columboola	139	\$23,248	\$20,033	\$5,303,414	\$4,569,890
<b>Total</b>				<b>\$10,374,396</b>	<b>\$10,851,401</b>

This forecast shows that, for the West Moreton Network, the nominal common costs expected given the derived cost curves is approximately \$10.3-\$10.8 million per year.

However, it should be noted that this nominal value will not take into account the location specific issues associated with the West Moreton Network, which may increase or decrease the expected common costs. For example, there are significant sections of concrete sleepered track on the West Moreton Network, which would not be the case for other low tonnage routes – lower maintenance costs associated with concrete sleepers would tend to

<sup>18</sup> Andersson, M. (2011). Marginal cost of railway infrastructure wear and tear for freight and passenger trains in Sweden, *European Transport \ Transporti Europei* 48(1), pp. 3 -23

reduce the expected common costs on the West Moreton Network. However, the West Moreton Network also incorporates some highly challenging terrain and weather conditions, which will tend to increase its expected costs compared to other networks.

However, the top down approach provides a useful indication of the costs that could be expected on a low volume route, based on Queensland Rail's experience in maintaining other low volume routes, compared to a medium volume route.

#### Common Costs – Bottom up approach

For the bottom-up estimation of the common maintenance costs for the West Moreton Network, Queensland Rail's asset management group has prepared a number of indicative maintenance budgets for the West Moreton Network, using the following alternate assumptions:

- **Base maintenance budget:** this budget reflects Queensland Rail's expected maintenance costs over the five year regulatory term, based on the current forecast traffic for the West Moreton Network (including both coal and non-coal services). This is the budget that was provided to the QCA as part of the 2015DAU submission;
- **Common cost budget:** Queensland Rail has calculated an alternate indicative budget based on the assumption that maintenance need only be completed to facilitate the continual availability of the network to a minimal amount of regular traffic.

**Table 2 Common Cost estimate by maintenance product**

West Moreton Maintenance Plan 2015/2020 Budget		FY16 (\$'000)		FY17 (\$'000)		FY18 (\$'000)		FY19 (\$'000)		FY20 (\$'000)	
Discipline	Product Description (\$'000)	Total	Common	Total	Common	Total	Common	Total	Common	Total	Common
<b>TRACK AND CIVIL INFRASTRUCTURE</b>											
	Repairs Concrete Bridges	150	150	0	0	0	0	0	0	0	0
	Repairs Steel Bridges	237	47	250	50	250	50	250	50	250	50
	Repairs Timber Bridges	1581	700	1126	700	1073	700	1021	700	1466	700
	Steel Bridge Paint (Contract)	0	0	0	0	5700	5700	0	0	500	0
	Structures Inspection	620	496	243	194	399	319	243	194	702	399
	Structures Pest Control	15	15	15	15	15	15	15	15	15	15
	Drainage Construction	200	200	0	0	0	0	0	0	0	0
	Drainage Maintenance	364	364	275	275	375	375	275	275	375	375
	Retaining Wall Maintenance	0	0	20	20	20	20	20	20	20	20
	<b>Structures and Civil Total</b>	<b>3167</b>	<b>1972</b>	<b>1929</b>	<b>1254</b>	<b>7832</b>	<b>7179</b>	<b>1824</b>	<b>1254</b>	<b>3328</b>	<b>1559</b>
	Ballast Undercutting Other	1170	600	1400	600	1400	600	1400	600	1400	600
	<b>Ballast Undercutting Total</b>	<b>1170</b>	<b>600</b>	<b>1400</b>	<b>600</b>	<b>1400</b>	<b>600</b>	<b>1400</b>	<b>600</b>	<b>1400</b>	<b>600</b>
	Earthworks - Non Formation	15	15	150	150	150	150	100	150	100	100
	<b>Earthworks Total</b>	<b>15</b>	<b>15</b>	<b>150</b>	<b>150</b>	<b>150</b>	<b>150</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
	Minor Yard Maintenance	230	130	230	130	230	130	230	130	230	130
	Rail Joint Management	1641	300	1520	300	1260	300	1050	300	1050	300
	Rail Renewal	931	0	931	0	931	0	931	0	931	0
	Turnout Maintenance	150	75	150	75	150	75	150	75	150	75
	Mechanised Resleepering	16334	13067	0	0	0	0	0	0	0	0
	Monument/Signage Mice	357	60	360	60	60	60	60	60	60	60
	Maintenance Ballast	1035	800	690	435	660	435	630	435	620	435
	Sleeper Management	375	300	225	175	360	290	540	450	1080	800
	Fire & Vegetation Mgmt	1391	1391	1400	1400	1400	1400	1400	1400	1400	1400
	Rail Stress Adjustment	794	300	790	300	790	300	790	300	790	300
	Track Inspection	781	781	785	785	785	785	785	785	785	785
	Rail Lubrication	256	100	260	100	260	100	260	100	260	100
	Top & Line Spot Resurfacing	1372	600	1370	600	1370	600	1370	600	1370	600
	Rail Repair	1548	250	1250	250	1150	250	1080	250	1080	250
	<b>Track Maintenance Total</b>	<b>27195</b>	<b>18154</b>	<b>9961</b>	<b>4610</b>	<b>9406</b>	<b>4725</b>	<b>9276</b>	<b>4885</b>	<b>9806</b>	<b>5235</b>
	Mechanised Resurfacing	3000	1000	2950	1000	2900	1000	2850	1000	2800	1000
	Mech Resurfacing Turnouts	0	0	90	30	90	30	90	30	90	30
	<b>Resurfacing Total</b>	<b>3000</b>	<b>1000</b>	<b>3040</b>	<b>1030</b>	<b>2990</b>	<b>1030</b>	<b>2940</b>	<b>1030</b>	<b>2890</b>	<b>1030</b>
	Rail Grinding - Mainline	683	0	391	0	654	0	391	0	654	0
	Rail Grinding - Turnouts	98	0	91	0	175	0	105	0	84	0
	<b>Rail Grinding Total</b>	<b>781</b>	<b>0</b>	<b>482</b>	<b>0</b>	<b>829</b>	<b>0</b>	<b>496</b>	<b>0</b>	<b>738</b>	<b>0</b>
	Track Geometry Recording	151	151	151	151	151	151	151	151	151	151
	Ultrasonic Test Ontrack Mach	200	0	200	0	200	0	200	0	200	0
	Ultra Sonic Testing (Manual)	64	32	65	32	65	32	65	32	65	32
	<b>Track Monitoring Total</b>	<b>415</b>	<b>183</b>	<b>416</b>	<b>183</b>	<b>416</b>	<b>183</b>	<b>416</b>	<b>183</b>	<b>416</b>	<b>183</b>
	<b>TRACK AND CIVIL Total</b>	<b>35743</b>	<b>21924</b>	<b>17378</b>	<b>7827</b>	<b>23023</b>	<b>13867</b>	<b>16452</b>	<b>8052</b>	<b>18678</b>	<b>8707</b>
<b>FACILITIES MAINTENANCE</b>											
	Fencing	50	50	50	50	50	50	50	50	50	50
	Level crossing maintenance	0	50	100	50	100	50	100	50	100	50
	Level crossing constr/recond	569	0	0	0	0	0	0	0	0	0
	<b>FACILITIES Total</b>	<b>619</b>	<b>100</b>	<b>150</b>	<b>100</b>	<b>150</b>	<b>100</b>	<b>150</b>	<b>100</b>	<b>150</b>	<b>100</b>
<b>SIGNALLING</b>											
	Preventative Telecoms Backbone Maintenance	103	103	108	108	108	108	108	108	108	108
	Phone/Data Maintenance	5	5	6	6	6	6	6	6	6	6
	<b>Telecommunications Total</b>	<b>108</b>	<b>108</b>	<b>114</b>	<b>114</b>	<b>114</b>	<b>114</b>	<b>114</b>	<b>114</b>	<b>114</b>	<b>114</b>
	Prevent Signalling Field Mice	821	821	823	823	823	823	823	823	823	823
	Correct Signalling Field Mice	237	190	241	190	228	180	215	172	203	162
	Signalling Level Xing Protect	513	513	519	519	519	519	519	519	519	519
	Cable Route Maintenance	196	196	196	196	196	196	196	196	196	196
	Signalling Train Protect System	51	51	51	51	51	51	51	51	51	51
	Wayside Monitoring System	55	55	61	61	61	61	61	61	61	61
	<b>Signal Maintenance Total</b>	<b>1873</b>	<b>1826</b>	<b>1891</b>	<b>1840</b>	<b>1878</b>	<b>1830</b>	<b>1865</b>	<b>1822</b>	<b>1853</b>	<b>1812</b>
	<b>SIGNALLING Total</b>	<b>1981</b>	<b>1934</b>	<b>2005</b>	<b>1954</b>	<b>1992</b>	<b>1944</b>	<b>1979</b>	<b>1936</b>	<b>1967</b>	<b>1926</b>
	<b>Sub-Total Maintenance</b>	<b>38343</b>	<b>23958</b>	<b>19533</b>	<b>9881</b>	<b>25165</b>	<b>15911</b>	<b>18581</b>	<b>10088</b>	<b>20795</b>	<b>10733</b>
<b>General</b>											
	Inventory & Minor Asset Mgmt	116	116	116	116	116	116	116	116	116	116
	Consulting/Technical Advice	380	50	380	50	380	50	380	50	380	50
	Asset Management	625	400	620	400	620	400	620	400	620	400
	Project Mgmt & Services	59	30	59	30	59	30	59	30	59	30
	<b>GENERAL Total</b>	<b>1180</b>	<b>596</b>	<b>1175</b>	<b>596</b>	<b>1175</b>	<b>596</b>	<b>1175</b>	<b>596</b>	<b>1175</b>	<b>596</b>
	<b>GRAND TOTAL</b>	<b>39523</b>	<b>24554</b>	<b>20708</b>	<b>10477</b>	<b>26340</b>	<b>16507</b>	<b>19756</b>	<b>10684</b>	<b>21970</b>	<b>11329</b>

The resulting bottom up common cost estimate is shown in the table below. In presenting this estimate, major one off costs have been separately identified, including mechanised resleepering and steel bridge painting.

**Table 3 Common Cost estimate – bottom up methodology (\$,000)**

Cost Group	FY16	FY17	FY18	FY19	FY20	Average
Common cost (exc major items)	\$11,487	\$10,477	\$10,807	\$10,684	\$11,329	\$10,957
Major items	\$13,067	-	\$5,700	-	-	
Total common cost	\$24,554	\$10,477	\$16,507	\$10,684	\$11,329	\$14,720
% of total cost	62.1%	50.6%	62.7%	54.1%	51.6%	57.3%

While on average the bottom up common cost estimate is somewhat higher than indicated by the top down approach, this primarily relates to the high costs associated with a small number of irregular items. Excluding the forecast irregular major costs associated with mechanised resleepering and steel bridge painting, the bottom up common cost estimated by Queensland Rail is quite similar to the common cost estimate derived through the top-down approach. This provides some confidence in the reasonableness of these indicative common cost estimates.

#### Coal fixed and variable costs

As noted above, the common cost estimates derived by Queensland Rail above reflect the maintenance costs required to allow the operation of a limited number of train services. These are considered sufficient to allow the ongoing operation of the non-coal services. To the extent that variable costs are identified, however, it would be reasonable to also assign variable maintenance costs to the non-coal traffics.

However, as is clearly apparent from the bottom up maintenance budgets for the two scenarios above, significant additional maintenance costs will be incurred to provide for the operation of coal services at an assumed ongoing volume in excess of 6mtpa. While in the long term, these additional costs may be considered to be fully variable, this is not the case over the shorter time horizon that is reflected in Queensland Rail's maintenance cost forecasts. As a result, within the forecasting horizon, these additional costs will include a combination of fixed and variable costs.

Precisely assessing the extent to which this reflects coal fixed or variable costs is not a simple exercise. The QCA has only raised the fixed and variable cost approach for West Moreton for the first time in October 2015 after many years of assessing Queensland Rail's proposed undertaking. As such, given the limited time to address such a complex topic, Queensland Rail's estimates are 'indicative'.

#### Coal Fixed Costs

These costs are intended to represent the fixed costs that are incurred when the network is running at its expected volume, that is, in excess of 6mtpa. While these costs may be variable with tonnage over the long-term, they are fixed given the forecast level of coal traffic over the regulatory period. These costs can be approximated by:

- first, excluding those costs that have been flagged as variable with tonnage in the indicative maintenance budget provided above; and

- then, where the resulting fixed cost estimate for the whole network (as submitted to the QCA) is higher than the bottom up common cost maintenance estimate, this is treated as a coal fixed cost.

### Variable Costs

Variable costs include those cost elements that Queensland Rail has indicated would vary with tonnages on the network. Variable costs have been estimated for these cost elements as the total cost, less any part of that cost element that has been included in the common cost category above. This shows that these costs will not be 100% variable with tonnage as there may be a need for some of these works to be undertaken even when there are very low tonnages.

The outcomes of this approach are shown by maintenance product in Attachment 1 to this paper.

By using the above methodology, the following common, coal fixed and variable splits for the forecast maintenance period have been calculated:

**Table 4 Forecast maintenance cost proportions by category**

Cost Group	FY16	FY17	FY18	FY19	FY20	Average
Common Cost	62.1%	50.6%	62.7%	54.3%	51.6%	57.3%
Coal Fixed	22.6%	21.7%	17.2%	20.7%	26.2%	21.7%
Variable	15.2%	27.7%	20.1%	25.0%	22.2%	21.0%

**Table 5 Forecast maintenance costs by category (\$,000)**

Cost Group	FY16	FY17	FY18	FY19	FY20	Average
Common Cost	\$24,554	\$10,477	\$16,507	\$10,684	\$11,329	\$14,710
Coal Fixed	\$8,942	\$4,491	\$4,533	\$4,082	\$5,761	\$5,562
Variable	\$6,027	\$5,740	\$5,300	\$4,940	\$4,880	\$5,377
Total	\$39,523	\$20,708	\$26,340	\$19,706	\$21,970	\$25,649

### Comparison with B&H fixed and variable maintenance costs

Queensland Rail's indicative estimate of the extent to which costs are common, coal fixed and variable costs compares to B&H's fixed and variable cost assessment as shown below:

**Table 6 Comparison of Queensland Rail and B&H Approach**

Cost Group	Queensland Rail %	B&H %
Common Cost	57.3%	67.4%
Coal Fixed	21.7%	
Variable	21.0%	32.6%

However, as can be seen from Queensland Rail's cost analysis above, the assessment of the extent to which costs are fixed or variable will vary depending on:

- The volume horizon assumed – that is, has the fixed and variable cost assessment been made based on the forecast costs associated with the current volume levels, or based on the forecast costs associated with a minimal level of traffic; and

- The time horizon assumed – as noted above, the longer the time horizon considered, the greater proportion of costs that can potentially be considered to be variable.

From B&H's report, it is unclear what time horizon has been adopted in its assessment of the fixed vs variable split. However, it appears that B&H has made its assessment of the fixed vs variable split based on the current forecast volume horizon, with B&H noting specifically that:<sup>19</sup>

- the cost characteristics at a total volume of around 7mtpa are neither dominated by high wear and tear (as are Aurizon Network's central Queensland coal lines) nor subject to very limited volume; and
- that the context of its task was to hypothecate a large variation in activity, as has occurred between Queensland Rail's 2013DAU forecast and its 2015DAU forecasts (importantly, the 2015DAU forecasts continue to reflect in excess of 6mtpa of coal).

As a result, it is unsurprising that B&H's fixed cost proportion is materially higher than Queensland Rail's common cost proportion, as B&H's fixed cost proportion is likely to include some of the fixed costs that are triggered by the need to maintain the network in a condition suitable for the operation of 6mtpa of coal. It is also unsurprising that B&H's variable cost proportion is higher than Queensland Rail's variable cost proportion, as Queensland Rail has considered the extent to which costs are variable over its forecasting horizon (up to five years) rather than over the longer term.

A simple categorisation of costs as fixed or variable is completely inadequate as a method to properly assess the causation of costs. A substantial proportion of the fixed costs are common to all users, however, on a network with mixed traffic there needs to be a distinction between customers and how much their activity on the network induces the need for more maintenance. The categorisation of maintenance costs into common costs, coal fixed costs and variable costs will take this into account more effectively than a simple categorisation of fixed and variable costs.

In introducing a new approach, it is essential that the QCA undertakes proper and reliable analysis rather than relying on a simplistic methodology that results in non-coal services and Queensland Rail subsidising the coal industry and results in Queensland Rail recovering less than its efficient costs. The 2015DAU currently achieves this and the 2015 draft decision does not. However, in terms of a fixed v. variable cost approach, Queensland Rail has provided indicative estimates of the categorisation of costs into common, fixed and variable in order to demonstrate the problems associated with a simple fixed vs variable cost split or the introduction of a fixed/variable split this late in the regulatory process.

## Capital Costs

In its draft decision, the QCA considered that the forecast capital expenditure was completely fixed in nature. While capital expenditure does not significantly vary directly with tonnage within the forecasting horizon of up to 5 years, the concept of common costs and coal fixed costs may apply equally to asset renewal expenditure as they do to maintenance expenditure.

A large proportion of Queensland Rail's forecast capital expenditure program is comprised of asset renewal works which are designed to strengthen and improve the quality of the rail infrastructure so that it is in a suitable condition to support the transport of 6mtpa plus of coal. Much of this work would not be required in the foreseeable future if the forecast traffic task was limited to a minimal number of train services per week.

Capital expenditure programs are typically far 'lumpier' than maintenance, and as a result, Queensland Rail does not consider that it would be valid to create a top down estimate of

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<sup>19</sup> B&H Strategic Services (2014), Review of Queensland Rail's 2015 DAU, p29



likely capital expenditure, similar to the approach used for maintenance, by using a trendline relationship based on historical expenditure. However, the level of capital expenditure that Queensland Rail expects to incur on its low volume routes can be observed from Queensland Rail's asset management plans for its regional rail systems, which are primarily low volume routes. Table 7 below shows Queensland Rail's forecast capital program for the next 5 years for each of these systems:

**Table 7 Forecast capex on low volume routes (\$,000)**

System	FY16	FY17	FY18	FY19	FY20
Central Western	\$10,240	\$6,560	\$5,600	\$4,400	\$5,600
South Western	\$3,282	\$2,420	\$2,800	\$1,600	\$2,000
Western	-	-	-	-	-
Tablelands	\$1,235	\$2,100	\$1,600	\$1,600	\$1,600

### Common Costs – Bottom up approach

Using a similar concept as we have used for maintenance costs above, Queensland Rail has prepared two alternate forecast capital programs over the next five years. The first reflects the capital expenditure forecast based on current traffic levels, and the second reflects forecast capital costs that would be needed to facilitate the use of the network with a minimal amount of traffic. These costs have been treated as common costs.

### Coal fixed costs

**Table 8 Forecast common capex by capital project**

West Moreton Capital Plan 2015/2016 Budget			FY16 (\$'000)		FY17 (\$'000)		FY18 (\$'000)		FY19 (\$'000)		FY20 (\$'000)	
Discipline	Project ID	QCA Cap ID	Total	Common	Total	Common	Total	Common	Total	Common	Total	Common
		2	3,006	120	0	0	0	0	0	0	0	0
		3	3,001	1,000	5,271	1,757	6,507	2,169	6,828	2,276	6,492	2,164
		9	2,000	0	0	0	0	0	0	0	0	0
		3	1,999	0	0	0	0	0	0	0	0	0
		1	1,500	500	1,500	500	1,500	500	1,500	500	1,500	500
		4	1,000	0	1,200	0	0	0	0	0	0	0
		2	0	0	3,112	120	3,006	120	3,006	120	3,006	120
		5	0	0	1,000	1,000	2,000	2,000	2,000	2,000	2,000	2,000
		3	0	0	1,000	0	0	0	0	0	0	0
			<b>Civil Program Total</b>	<b>12,506</b>	<b>1,620</b>	<b>13,083</b>	<b>3,377</b>	<b>13,013</b>	<b>4,789</b>	<b>13,334</b>	<b>4,896</b>	<b>12,998</b>
		15	1,298	0	460	0	0	0	0	0	0	0
		15	0	0	625	0	400	0	0	0	0	0
			<b>Condition Monitoring Total</b>	<b>1,298</b>	<b>0</b>	<b>1,085</b>	<b>0</b>	<b>400</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
		20	0	0	0	0	100	100	285	285	0	0
		21	0	0	0	0	100	100	100	100	100	100
		22	0	0	0	0	150	150	150	150	150	150
		16	0	0	0	0	50	50	455	455	455	455
		11	1,728	1,728	702	702	1,500	1,500	0	0	0	0
		13	1,071	1,071	0	0	0	0	0	0	0	0
		12	700	700	450	450	0	0	0	0	0	0
		19	400	400	450	450	0	0	0	0	0	0
		17	280	280	180	180	0	0	0	0	0	0
		18	25	25	250	250	250	250	0	0	0	0
		14	10	10	10	10	240	240	240	240	0	0
		13	0	0	511	511	0	0	0	0	0	0
		23	0	0	0	0	0	0	100	100	350	350
		12	0	0	0	0	1,400	1,400	800	800	550	550
			<b>Signalling Program Total</b>	<b>4,214</b>	<b>4,214</b>	<b>2,553</b>	<b>2,553</b>	<b>3,790</b>	<b>3,790</b>	<b>2,130</b>	<b>2,130</b>	<b>1,605</b>
		24	2,125	2,125	0	0	0	0	0	0	0	0
		25	69	69	0	0	0	0	0	0	0	0
			<b>Telecomms Program Total</b>	<b>2,194</b>	<b>2,194</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
		6	3,642	0	2,329	0	0	0	0	0	0	0
		8	0	0	2,022	0	2,059	0	2,059	0	2,059	0
		7	1,187	0	3,580	0	2,580	0	2,580	0	3,115	0
		6	0	0	2,476	0	4,911	0	1,899	0	0	0
		10	0	0	400	400	400	400	400	400	400	400
			<b>Track Program Total</b>	<b>4,829</b>	<b>0</b>	<b>10,807</b>	<b>400</b>	<b>9,950</b>	<b>400</b>	<b>6,938</b>	<b>400</b>	<b>5,574</b>
			<b>GRAND TOTAL</b>	<b>25,041</b>	<b>8,028</b>	<b>27,528</b>	<b>6,330</b>	<b>27,153</b>	<b>8,979</b>	<b>22,402</b>	<b>7,426</b>	<b>20,177</b>

Coal fixed capex has simply been assessed as the difference between Queensland Rail's total forecast capex program based on current traffic forecasts, and the forecast common capex determined through the bottom up methodology described above. The resulting indicative categorisation of capex costs into common capex and coal fixed capex is shown in the tables below.

**Table 9 Forecast capex costs by category**

Cost Group	FY16	FY17	FY18	FY19	FY20
Common Capex	\$8,028	\$6,330	\$8,979	\$7,426	\$6,789
Coal Fixed Capex	\$17,013	\$21,198	\$18,174	\$14,976	\$13,388
Total	\$25,041	\$27,528	\$27,153	\$22,402	\$20,177

**Table 10 Forecast capex cost proportions by category**

Cost Group	FY16	FY17	FY18	FY19	FY20
Common Capex	32%	23%	33%	33%	34%
Coal Fixed Capex	68%	77%	67%	67%	66%

## Independent Review

Queensland Rail commissioned Synergies Economic consulting to undertake an economic review (refer Attachment 2) and Everything Infrastructure to undertake an engineering review (refer Attachment 3) of the QCA's proposed cost allocation methodology. Both have found the QCA's methodology to be seriously flawed.

Synergies concluded that there is no robust economic justification for approach taken by the QCA in its draft decision. Rather, Synergies found that the QCA's view is flawed and will have significant negative consequences on efficient incentives for the operation of, use of and investment in the rail network, to the extent that Synergies considers that the cost allocation rule is inconsistent with achieving the objectives of the Act. In particular:

- it does not recognise the nature of cost drivers in an industry that exhibits a decreasing marginal cost such as rail infrastructure, as it effectively treats common future costs as if, in the long term, they are fully variable according to installed paths;
- recognising that this cost allocation approach is directly used to set prices, it does not reflect the principles of economic theory in relation to setting efficient prices in a declining cost business, and the requirements that must be met to ensure cross subsidies do not occur;
- given only 3 of the allocated 35 non-coal paths are used by non-coal services, with the remaining paths unused, this effectively allows Queensland Rail no prospect of recovering the QCA's assessed efficient common costs of providing the infrastructure from the users of the service;
- it prevents efficient signals being given to Queensland Rail in relation to the future maintenance and renewal of the infrastructure that is essential for the ongoing provision of coal services, as it will not have a business case that anticipates full recovery of these future costs; and
- it does not comply with the QCA Act's pricing principles which entitle Queensland Rail to "*generate expected revenue for the service that is at least enough to meet the efficient costs of providing access to the service*".<sup>20</sup>

Everything Infrastructure also "*considers that the QCA cost allocation methodology is deficient because it does not adequately allocate costs.*"<sup>21</sup>

<sup>20</sup> Section 168A Pricing principles of the *Queensland Competition Authority Act 1997*

<sup>21</sup> Everything Infrastructure, Review of Queensland Rail's Analysis of Approaches to Common, Fixed and Variable Costs, p 35

It appears that the QCA has quickly moved to a new cost allocation methodology without fully considering its appropriateness, not because the 2015DAU approach is deficient, but rather the change from its own established precedents could appear to be an attempt to reduce coal transport's legitimate contribution to costs in order to seek to reduce the reference tariff for coal services.

The 2015 draft decision attributes its changed methodology to the fall in demand and the resultant increase in costs to coal services:

*"We support common network costs being allocated amongst the different classes of users in the West Moreton network. However, we are not approving Queensland Rail's proposed approach of allocating various fixed costs of the common network.*

*The material reduction in demand for West Moreton network train paths necessitates an efficient approach of allocating common network costs in the presence of spare capacity.*

*Previous considerations of West Moreton network pricing were undertaken in the context of available capacity being potentially insufficient to satisfy all requests for access rights.<sup>385</sup> The 2015 DAU has been developed by Queensland Rail in a fundamentally different market demand context.*

*.....A key driver underpinning Queensland Rail's proposed ceiling price of \$34.92/'000 gtk is the significant reduction in expected railings, as it proposes to allocate all maintenance, operating, capital expenditure to remaining forecast traffics, which are predominantly coal."<sup>22</sup>*

However, the above statement is incorrect. When the QCA's 2014 draft decision on the 2013DAU was released, a draft decision which notably supported the same methodology as proposed in the 2015DAU, the network was not at full capacity, and there were paths available for contracting to coal services. Additionally, while overall tonnages are down, contrary to the QCA's above assumption, Queensland Rail currently has access requests in excess of current capacity.

The key change in the market circumstances that has occurred is that there has been a material decrease in non-coal traffic levels on the West Moreton Network. This will rightly result in a higher proportion of costs to coal services. The QCA should not require Queensland Rail to subsidise the coal industry. The QCA should not be specifically seeking to drive down the reference tariff, but rather should seek to retain its own precedent which results in both Queensland Rail being able to recover its efficient costs, as well as access holders being charged based upon usage.

In moving quickly to a new cost allocation methodology, the QCA has replaced a previously approved and efficient cost allocation methodology with a seriously flawed and simplistic fixed and variable approach. In analysing the QCA's methodology, Queensland Rail is not seeking to move away from the 2015DAU approach, but has demonstrated that the draft decision approach does not work and is not appropriate. The QCA should return to its established and proven precedent, rather than continue to create regulatory uncertainty by constantly changing methodologies or adopting methodologies that result in Queensland Rail not being able to recover at least its efficient costs.

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<sup>22</sup> Queensland Competition Authority (2015), *Draft Decision: Queensland Rail's 2015 Draft Access Undertaking*, October p 143

### 3.3 Review of the QCA's Reference Tariff Model

On 29 January 2016, after repeated requests, the QCA provided Queensland Rail with a copy of the model upon which the QCA based its proposed West Moreton Network Reference Tariff.

In the limited time available, Queensland Rail has identified a number of material errors and inconsistencies including:

1. A failure by the QCA to include numerous post-1995 assets in its valuation. A list of the excluded assets that Queensland Rail has been able to identify in the time available is set out in Attachment 4.
2. The QCA's adjustment charge calculation uses an end-of-year comparison between allowable revenue and post-tax revenue. This is inconsistent with normal building block calculations that adopt a mid-year comparison and has resulted in understated maintenance and operating cost allowances resulting in an adjustment charge that is overstated by \$0.12 per 000 GTKs.
3. Pre-1995 Assets - A significant one in four steel for wood sleeper replacement program was undertaken that has not been taken into account in the QCA's modelling. As it is an upgrade to steel sleepers it is a capital program and should be treated as such.

## 4 Adjustment Amount

### 4.1 Regulatory risk and investment impacts

*"Aurizon (pp. 11-12), New Hope (vol. 1, pp. 5-6; vol. 2, pp. 20-23) and Yancoal (p.1) said that Queensland Rail's changed position on an adjustment amount created regulatory risks. Among other things, they said this could impact on investment in the future. In this context, Yancoal said that 'if an adjustment amount is not ultimately provided for that will be such a substantial and unwarranted change to the regulatory framework (and Yancoal's expectations of how it would operate based on ... QR's previous representations) that the resulting regulatory uncertainty will necessarily be taken into account when Yancoal and its shareholders are considering future investment in Cameby Downs ...' (Yancoal, p. 1).*

*In contrast, Queensland Rail said that stakeholders would have been aware that a voluntary draft access undertaking could be withdrawn at any time and provisions could be changed (Queensland Rail, p. 14).*

*Stakeholder are requested to make further comments on this matter."*

Queensland Rail remains strongly of the view that there is no legal, commercial or regulatory basis for the Adjustment Amount as proposed by the QCA in its draft decision. Queensland Rail's various submissions on this matter continue to be relevant and appropriate. Queensland Rail repeats and relies on those submissions. Except as set out below, Queensland Rail does not propose to add to those submissions at this time.

The QCA has suggested that approving Queensland Rail's proposed 2015DAU, without an Adjustment Amount, would create regulatory uncertainty which would, amongst other things, adversely impact on investment.<sup>23</sup>

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<sup>23</sup> Queensland Competition Authority (2015), *Draft Decision: Queensland Rail's 2015 Draft Access Undertaking*, October, pp 209-219

There is no reasonable basis for the regulator to hold such a concern. Queensland Rail's initial response to the QCA's draft decision identified serious shortcomings in the QCA's analysis, and in particular the reliability of the expert advice on which it relied.

Stakeholder submissions clearly have been influenced by the tone of the draft decision, with various submissions providing assertions, without evidence, of how regulatory risk supposedly has been increased by Queensland Rail altering its position on this one matter.

Based on submissions, some key facts warrant reiteration:

- Queensland Rail has never in the past received any benefit from any Adjustment Amount. Aurizon Network's submission states that Queensland Rail retained \$13.8 million in "Adjustment Charges" in 2010.<sup>24</sup> This is not correct because those amounts were passed on in full to Aurizon Network.

The Adjustment Charges specified above related to the period up to 30 June 2010 and were in relation to the increase in the West Moreton reference tariff which was sought by Aurizon Network and effected through the QCA's final pricing decision in June 2010.

Aurizon Network was the owner of the West Moreton system during the period to which the Adjustment Charge applied and it was required by virtue of an access undertaking developed by Aurizon Network which was subsequently made to apply to Queensland Rail.

Queensland Rail collected the Adjustment Charge on behalf of Aurizon Network and passed 100% of it through to Aurizon Network.

Any comments to the contrary are entirely incorrect.

- Queensland Rail's 2013DAU included provision for a form of adjustment amount, but this was only one element of an overall suite of methodologies, assumptions and forecasts which Queensland Rail used to determine Reference Tariffs in that draft access undertaking. Queensland Rail withdrew the 2013DAU once it became clear that the QCA intended to make material changes to key regulatory foundations on which the past and proposed Reference Tariff were underpinned – including the basis on which network assets were valued – with the effect of fundamentally altering any resultant Reference Tariff based on those changes. A volunteered obligation to 'back date' a tariff outcome was consequently and properly also withdrawn, given the QCA's decision to materially alter from its past and relied upon regulatory practice.
- Even if there was an "expectation promoted by Queensland Rail"<sup>25</sup> of a tariff adjustment, that expectation could only reasonably be framed in the context of the full package of tariff calculation methodologies and assumptions as proposed by Queensland Rail. There is no basis to claim that users had any expectation of a tariff adjustment based on factors such as the QCA's now-proposed approach to asset valuation.
- The QCA draft decision ignores the fact that stakeholders would have been aware that a voluntary draft access undertaking can be withdrawn at any time and, therefore, would have had the knowledge and understanding that any provisions in it could be changed and therefore would not rely on them in making investment decisions; similarly stakeholders would have been aware that the QCA may also refuse to approve a voluntary draft access undertaking with the result that none of the proposed provisions have any regulatory effect.

The 2013DAU was a voluntary draft access undertaking. The QCA Act allows for

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<sup>24</sup> Aurizon (2015), *Response to the Queensland Competition Authority's Draft Decision on the Queensland Rail 2015 Draft Access Undertaking*, 22 December, p.7

<sup>25</sup> Queensland Competition Authority (2015), *Draft Decision: Queensland Rail's 2015 Draft Access Undertaking*, October, p.134

voluntary access undertakings to be withdrawn, and indeed Queensland Rail understands that there have been five voluntary access undertakings withdrawn, by different access providers including in recent times:

- **June 2006** - QR withdrew its voluntary draft access undertaking.
  - **15 April 2010** - Aurizon Network withdrew its 2009 draft access undertaking.
  - **February 2013** – Queensland Rail withdrew its 2012DAU.
  - **August 2014** – Aurizon Network withdrew its 2013 draft access undertaking.
  - **December 2014** – Queensland Rail withdrew its 2013DAU.
- Queensland Rail is also not aware of what, if any, coal investment decisions were being taken and were dependent on the proposals under the 2013DAU. In any event, if such investment decisions were taken they could only sensibly be based on the 2013DAU not the QCA's draft decision. However, as indicated above, the 2013DAU was only a draft document and subject to change or even withdrawal. It is not clear why an investment decision would effectively 'bank' a draft access undertaking or a draft decision let alone part of a draft access undertaking or draft decision.

## 4.2 Methodology for calculation

*"Stakeholders including Aurizon (p. 12) and Queensland Rail (p. 19) said the Draft Decision lacked details about the methodology for calculating the adjustment amount. Staff have now prepared and attached at Appendix 1 a brief document outlining the calculation methodology for the adjustment amount.*

*Stakeholders are requested to make further comments on the methodology for calculating the adjustment amount."*

As Queensland Rail has submitted, the QCA has no legal or other basis on which to effectively 'back date' pricing decisions and amounts to a 'claw back' of revenue that Queensland Rail was legally entitled to be paid consistent with an access undertaking approved by the QCA.

The QCA's draft decision suggests that requiring Queensland Rail to apply an Adjustment Amount would not be retrospective.<sup>26</sup> Queensland Rail maintains that this statement does not withstand any reasonable scrutiny – the adjustment clearly is intended to be and has retroactive effect. Indeed, we note that users have interpreted the QCA's approach as deliberately retrospective.<sup>27</sup>

Despite the fact that the QCA has no legal or other basis for requiring an effective 'back dating' of its pricing decision, the QCA's stated rationale for the Adjustment Amount is to address "overpayment of access charges since 1 July 2013".<sup>28</sup> However, the proposed calculation is a mix of actual, forecast, current and past data, meaning it does not represent any reliable estimate of "over-recovery":

- asset values have been adjusted from those approved and applied by the QCA in the 2008AU, with the effect of substantially reducing the value of assets previously used by the QCA to determine Reference Tariffs – where a form of tariff adjustment has been applied in other regulatory contexts (for instance, with respect to Aurizon

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<sup>26</sup> Queensland Competition Authority (2015), *Draft Decision: Queensland Rail's 2015 Draft Access Undertaking*, October, p.210

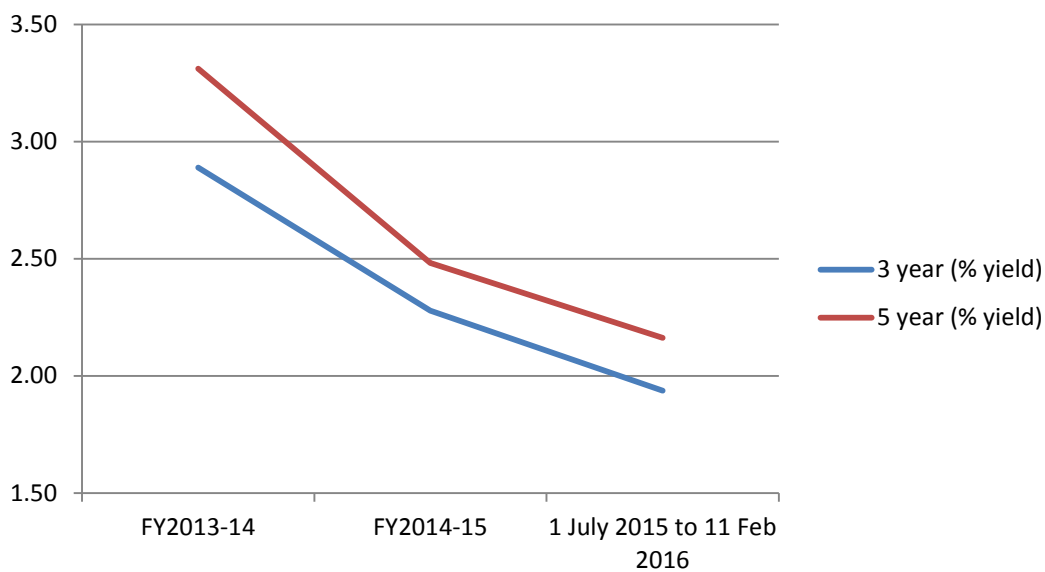
<sup>27</sup> See, for instance, Aurizon (2015): "Aurizon Operations is supportive of the QCA's Draft Decision which seeks to give effect to the principle of retrospectivity of the Western System reference tariff."p.7

<sup>28</sup> Queensland Competition Authority (2015), *Draft Decision: Queensland Rail's 2015 Draft Access Undertaking*, October, p. 215

Network) this has been done in an environment of regulatory stability and without the regulator making fundamental and unanticipated changes to previously established methodologies;

- the allocation of asset values (and fixed/variable operating and maintenance costs) is based on forward-looking estimates from 2015, yet is applied to a prior period where demand/network utilisation was substantially different;
- the maximum allowable revenue (MAR) for the 2013-14 and 2014-15 years was based on a WACC of 6.93%, but which was based on market data from a different time period – Queensland Rail’s analysis suggests, for instance, that underlying risk free rates were higher over these previous periods, such that the MAR calculated for these periods is understated (see Figure 4).

**Figure 4: Movements in risk free rates**



Source: Reserve Bank of Australia

Further, the way in which the Adjustment Amount is proposed to be calculated fundamentally alters the risk allocation that otherwise would have applied, were access charges reset on 1 July 2013.

An example is the inclusion of take-or-pay and relinquishment fees in the calculation of the Adjustment Amount. Were access charges reset on 1 July 2013, this would have been done on the basis of then anticipated network utilisation. Queensland Rail would have been entitled to retain any take-or-pay/relinquishment fees paid post this date, given that forecasts at that time would have anticipated the continued operation of the relevant mines.

### 4.3 East of Rosewood

*“The adjustment amount in the Draft Decision was calculated for Queensland Rail’s network West of Rosewood (QCA Draft Decision, p. 206, footnote 630). New Hope (vol. 1, p. 6; vol. 2, p. 22) and Yancoal (p. 1) said the adjustment amount should also be calculated for the Metropolitan network (i.e. also include an East of Rosewood adjustment amount).”*

*The QCA has not made a decision on whether the 2015 DAU proposed by Queensland Rail should provide for an adjustment amount. However, stakeholders are requested to make further*

*comments on the submissions made that an adjustment amount should also be calculated for the Metropolitan network.”*

Queensland Rail's submissions concerning the QCA's effective 'back dating' of pricing for the West Moreton Network coal traffics are equally applicable in the context of any consideration of an "Adjustment Amount" applying to the Metropolitan Network. Queensland Rail, therefore, submits that the QCA cannot require that its "Adjustment Amount" approach for the West Moreton Network also extend to the Metropolitan Network.

However, in addition to Queensland Rail's existing submissions, it should also be noted that the Metropolitan tariff is not based on any first-principles build-up of costs, rather it is a simple proxy based on the costs of the network west of Rosewood.

Any proposed Adjustment Amount, even if it could be required by the QCA, would need to be based on a full recalculation of the Metropolitan tariff, using the MAR that would have applied to that component of the network. This would need to be based on a proper and full valuation of the relevant network, determination of an appropriate allocation of costs between freight and passenger traffics, and other relevant parameters. To make an adjustment from an assumed proxy has no justification, and would compound the QCA's errors in respect of that proxy including the QCA's proposed exclusion of post-2002 capital from the Metropolitan tariff derivation.

## 5 West Moreton Network capacity and volumes

### 5.1 Available train paths

*“The Draft Decision was made on the basis of 112 paths on the West Moreton Network, but noted B&H's report which estimated West Moreton capacity to be in the order of 135 paths (QCA Draft Decision, p. 156, footnote 426). Stakeholders had different views on what is the appropriate number of available train paths on the West Moreton Network. New Hope (vol. 2, p. 16) and Yancoal (p. 2) said the number of paths should be 135. In contrast, Queensland Rail has said the number of paths should be 112 (Queensland Rail, Annexure 9, p. 8).*

*Stakeholders are requested to make further comments on these submissions.”*

The 65% West Moreton Network reduction factor<sup>29</sup>, and resultant 112 return train paths per week capacity was:

- approved by the QCA in the calculation of the current reference tariffs; and
- included in both the QCA's 2014 and 2015 draft decisions on Queensland Rail's Draft Access Undertakings.

The QCA should not move away from its established precedent and require Queensland Rail to sell capacity that cannot reasonably be provided or which does not exist.

It is not possible for Queensland Rail to rail 135 return train paths per week across the Toowoomba Range without access holders/mines funding large and extensive capital projects, which would result in a reference tariff that would be well beyond an access seeker's and end user's ability to pay the access charge.

To require Queensland Rail to contract capacity that does not exist or cannot reasonably be provided is against Queensland Rail's legitimate business interests, the access seeker's

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<sup>29</sup> Although called a reduction factor it is actually applied as the net sum rather than the sum reduced from the base. Thus 65% of X, or a reduction of 35%.



legitimate interests and against the public interest. It is also inconsistent with the efficient operation of the rail network.

The reduction factor is a practical measure that reduces the amount of network capacity to account for the effect of a number of varying influences on the daily operation of a rail network including (but not limited to):

- prevailing weather conditions;
- temporary speed restrictions;
- minor signal and trackside equipment faults;
- reduced locomotive and rollingstock performance, and
- individual train dynamics and driving techniques.

Train running speeds are reduced by the above factors, which consequently result in reduced network capacity.

For effective capacity planning a realistic assessment of network capacity is essential. While Queensland Rail understands the QCA process for the assessment of a draft access undertaking is an opportunity for industry to seek what may be perceived as maximising their commercial interests, it is not in their interests to have a QCA decision that incorrectly requires Queensland Rail to act as if there is capacity where there is not or where it cannot reasonably be provided.

The West Moreton Network has a reduction factor of 65%, which means there is a reduction in capacity of 35% where it is applied, which results in capacity across the Toowoomba Range of 112 return train paths per week.

However, QCA's consultant B&H suggested a reduction factor of 79% (a reduction in capacity of 21%) and consequently incorrectly concluded that the Toowoomba Range has a capacity of 135 return train paths per week.

Of significant concern is that B&H based the reduction factor of 79%, on information which the QCA has not provided to Queensland Rail and therefore cannot be properly reviewed. However, Queensland Rail believes that B&H's reliance on that information is flawed. The B&H report states:

#### ***"11.3 Previous Reduction Factor Estimates***

*In 2000 QR (now Aurizon) submitted capacity calculations indicating a "reduction factor" due to infrastructure requirements, including planned maintenance of 85%. Modelling at the time, performed by Maunsell (now AECOM) assumed a reduction factor of 95% due to unplanned maintenance."<sup>30</sup>*

As noted in Queensland Rail's response to the 2015 draft decision,

*"B&H rely in part on the above reports, however, they have not been provided to Queensland Rail for review, which limits Queensland Rail's ability to make a proper assessment of the B&H claims. Queensland Rail believes that these reports may be specific to the central Queensland coal system, and not the West Moreton Network (however is unable to verify this without the reports being made available). Queensland Rail notes that different systems have vastly different characteristics (e.g. West Moreton Network, central Queensland coal, ARTC's network).*

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<sup>30</sup> B&H Review of Queensland Rail's DAU 2015 B&H Strategic Services Pty Ltd September 2015, p.66

*Reduction factors would be expected to vary between systems to reflect their varying characteristics and as such the reports may have little relevance to the West Moreton Network.”<sup>31</sup>*

Networks will have vastly different characteristics (e.g. some networks will be subject to inclement weather, networks will vary in the age of their infrastructure and so on) and the quantum of the reduction will vary depending upon these unique characteristics. As such, there is no ‘one size fits all’ reduction factor, with a reduction factor being determined on a network by network basis. Key factors such as the weather conditions, the type of sleepers etc are vastly different between the West Moreton Network and the Blackwater System and, as such, their reduction factors are not comparable.

A further example of adjustment factors varying between networks is the ARTC reduction factor of 65%. ARTC in its *ARTC Hunter Valley Corridor 2007–2012 Capacity Strategy Consultation Document* stated:

*“The calculation of practical coal capacity varies between single and double track sections.*

*On single track the methodology uses a simple principle that theoretical daily capacity on a given section of track is equal to the number of minutes in the day divided by the section running time of the longest section, plus an allowance for safeworking / signal clearance.*

*This theoretical calculation implies continuous occupation of the longest section, which is unworkable in practice. Accordingly the theoretical capacity needs to be adjusted to practical capacity using a factor. An adjustment rate of 65% has been adopted for this analysis. That is, it is realistic to expect a section of track to carry 65% of its maximum theoretical capacity.”<sup>32</sup>*

Further, B&H have based their recommendation on a report that is now obsolete. QCA consultant Halcrow made updated capacity assessments in relation to central Queensland coal systems as part of the QCA’s assessment of QR’s 2005 draft access undertaking, a capacity assessment that supersedes the now outdated Blackwater analysis.<sup>33</sup>

While B&H offer no evidence that Queensland Rail’s adjustment factor of 65% (as previously approved by the QCA) is incorrect, industry participants referred to in the Request for Comments paper also offer no evidence to support the B&H assertion. Broad statements of agreement with B&H are offered in responses, but no evidence of the accuracy of the B&H assessment is provided. For example, New Hope simply stated:

*“We also note that B&H estimates West Moreton network capacity to be in the order of 135 paths rather than 112 paths, which would indicate that the portion attributable to coal services (which the QCA caps at the maximum 77 paths which are able to be contracted to coal) should be substantially lower. This difference does not appear to be assessed in the Draft Decision, and NHC requests that the QCA calculate the proportion based on the actual capacity B&H has estimated is available unless there is compelling*

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<sup>31</sup> Submission – Queensland Rail’s Draft Access Undertaking 1 (2015) Response to Queensland Competition Authority’s Draft Decision to refuse to approve draft access undertaking, December 2015 Annexure 9 – Response to B&H Alternative Assessment of Capacity, West Moreton Network – Response to B&H Alternative Assessment of Capacity Response to B&H Report December 2015, p3

<sup>32</sup> ARTC Hunter Valley Corridor 2007–2012 Capacity Strategy Consultation Document, p. 4

<sup>33</sup> B&H Review of Queensland Rail’s DAU 2015 B&H Strategic Services Pty Ltd September 2015, p.67

*evidence (of which NHC is not current aware) that B&H's higher estimate of available paths is flawed or incorrect*<sup>34</sup>

while Yancoal simply made the following observation:

*"..it is not clear why the total number of paths available for all traffics is not being assumed to be the larger number of paths discussed in the B&H report (which would effectively decrease the proportion the so called 'coal paths' formed of the total paths available);"*<sup>35</sup>

Neither of these statements by New Hope and Yancoal give any evidence in support of B&H's view.

Queensland Rail is further concerned by the QCA consultant's inappropriate and unqualified use of data collected from Queensland Rail. Despite the fact that Queensland Rail noted material qualifications in relation to the information it was requested to provide, B&H simply stated:

*"Queensland Rail also submitted with their response to the data request a record of "Train Delays" that have occurred due to various reasons over the last 6 years. Weather conditions, TSRs and minor infrastructure faults consume between 53% and 74% (av 61%) of the delays. The others are above rail factors. Minor infrastructure fault delays consume only 4%."*<sup>36</sup>

In the QCA's information request dated 28 July 2015, the QCA sought:

*"statistics (e.g. the number of minutes or the percentage of pathways lost) since 2010 or for the time records are available on each of the following factors affecting the daily operation of a rail network*

- (i) The prevailing weather conditions;*
- (ii) Temporary speed restrictions;*
- (iii) Minor signal and trackside equipment faults;*
- (iv) Reduced locomotive and rollingstock performance;*
- (v) Individual train dynamics and driving techniques;*
- (vi) Unplanned above rail incidents"*

However, B&H failed to properly highlight in their report that in correspondence dated 18 August 2015, in response to that QCA information request, Queensland Rail identified that the data provided is not appropriate for determining the reduction factor stating:

*"...Queensland Rail does not have information that identifies the percentage of pathways lost in these categories. In any event, cancelled paths will often be made up on another occasion where the Network is not operating at full capacity. As such, Queensland Rail has provided information relating to the number of minutes lost compared to plan.*

*It should be noted that Queensland Rail's current data recording codes do not record in many of the six categories sought by the QCA. As such, Queensland Rail has had to make assumptions in relation to existing categories to roll these into the categories that*

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<sup>34</sup> New Hope Submission on Queensland Rail's 2015 Draft Access Undertaking Submission on QCA's Draft Decision Volume 2, December 2015, p 16

<sup>35</sup> Yancoal's submission on the QCA draft decision regarding Queensland Rail's 2015DAU, 24 December 2015, p. 2

<sup>36</sup> B&H Review of Queensland Rail's DAU 2015 B&H Strategic Services Pty Ltd September 2015, p.67

are being sought in order to provide information on minutes lost compared to plan. This will lead to inaccuracies.

Additionally, delays that occur in Networks other than the West Moreton Network (e.g. the Metropolitan Network, the Western Network, the South Western Network etc.) may cause delays to the West Moreton Network, however, these will not be captured in the data requested, which relates to the minutes lost on the West Moreton Network. Delays are recorded in their Network of origin.

Further, port and mine delays which may affect the West Moreton Network will not be included in the data provided, but rather will be recorded as relating to point of origin.

During major weather events such as the 2011 floods the recording systems are suspended as all train services are cancelled. Therefore, there is no delay data for these periods. (e.g. during the 2011 floods, trains were cancelled for approximately three months).

Also it should be noted that the six categories listed by Queensland Rail, and in which the QCA is seeking delays lost, is not an exclusive list. Other matters in addition to those listed above may result in reduced operational capacity.”

The B&H report relies in part upon this data, data that Queensland Rail had clearly identified as being unreliable for that purpose. This result is that the B&H assessment is fundamentally inaccurate and seriously flawed on this issue; and does not substantiate a change to the reduction factor or that Queensland Rail’s proposed reduction factor is incorrect.

B&H conclude:

#### **“11.4 Conclusion**

*For the Western System, eliminating the effects of above rail factors for the reasons given, the author’s own experience and the prior evidence, we conclude that, in addition to 19 hours per week planned maintenance (11.3% week) a further “reduction factor” of 79%, and not Queensland Rail’s proposition of 65%, should apply.”<sup>37</sup>*

However, the B&H report:

- makes direct reference to “prior evidence’ which is obsolete and which is relevant to the Central Queensland coal network and therefore is not relevant to the West Moreton Network;
- refers to the “author’s own experience” and yet does not expand upon examples or past analysis; and
- relies on data which is seriously flawed.

Further, stakeholders have not offered any evidence that the QCA approved 65% reduction factor is incorrect.

It is submitted that the QCA should not move away from its established precedent, as to do so would result in a move away from a realistic, useable and practical capacity assessment to an unrealistic capacity requirement that is entirely unsupported by any credible evidence as to whether it could reasonably be achieved.<sup>38</sup>

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<sup>37</sup> B&H Review of Queensland Rail’s DAU 2015 B&H Strategic Services Pty Ltd September 2015, p.67

<sup>38</sup> In 2013 the West Moreton Network was closed for three months due to an extreme flood event. Queensland Rail subsequently entered a catch-up period in an effort to make up lost tonnages. It should be noted that even during this period of high railings, where Queensland Rail worked with industry to recover paths lost due to the extreme 2013 flood event, Queensland Rail did not rail above 112 return paths per week.

## 6 Take-or-pay

*“The Draft Decision proposed that Queensland Rail’s West Moreton and Metropolitan network take-or-pay revenue from coal services be capped at the total revenue allocated to coal services in assessing coal tariffs, and that take-or-pay obligations be 100 per cent of access charges (QCA Draft Decision, p. 198).*

*Stakeholders had different views on take-or-pay provisions. New Hope (vol. 2, p. 18) and Yancoal (p. 2) said take-or-pay should be set at 80 per cent to reflect the fact that some costs were avoidable if trains did not run. Aurizon (p. 25) also said take-or-pay should reflect avoidable costs. In contrast, Queensland Rail said 100 per cent take-or-pay provided increased downside revenue protection, but that the ‘downside exposure’ remained for a number of reasons, including where take-or-pay was not payable during a force majeure event. Queensland Rail also considered that increasing its ‘downside exposure’ by suspending take-or-pay in the event of a force majeure event was not appropriate given the price cap model (Queensland Rail, pp. 52-54).*

*Stakeholders are requested to make further comments on these submissions.”*

### 6.1 Take or pay

Queensland Rail refers the QCA to its explanatory submission volume two accompanying the 2015DAU<sup>39</sup>.

### 6.2 Volume trigger

In its 2015DAU, Queensland Rail proposed volumes higher than contracted levels based on its expectation that coal services will use a substantial number of ad hoc paths. The QCA accepted this proposal, but proposed to implement a ‘volume trigger’ mechanism so that if contracted volumes rise, reference tariffs would be recalculated to reflect the higher expected utilisation of the network. The QCA said that Queensland Rail’s proposal did not allow for any adjustments if Queensland Rail’s forecasts were incorrect.

The QCA’s proposal for a volume trigger is based on the assumption that forecasts can be ‘incorrect’ – which, in Queensland Rail’s view, could mean contracted volume could either be higher or lower than forecast. However, the QCA’s proposed approach is strictly based on the assumption that contracted volumes could be higher, not lower than forecast. The QCA does not demonstrate how this asymmetric treatment of volume is appropriate, noting the QCA’s comments that:

*“A volume-based endorsed variation event trigger has the desirable features of:*

- *mitigating uncertainty about forecast volumes and their corresponding impact on the level of the approved reference tariffs, by allowing reference tariffs to be revised to reflect the impact of material changes in contracted volumes (that is, when they are greater than forecast volumes)*

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<sup>39</sup> Submission – Queensland Rail’s Draft Access Undertaking 1 (2015) Response to Queensland Competition Authority’s Draft Decision to refuse to approve draft access undertaking December 2015, pp 50-54

- *satisfying expectations that, as contracted volumes increase above those used to determine reference tariffs (initially based on forecast volumes), reference tariffs will reduce to reflect economies of density*
- *providing incentives for users to contract capacity.....the variation approach results in a lower approved reference tariff*
- *mitigating incentives to use ad hoc services in preference to contracting capacity.*<sup>40</sup>

The QCA has presented a case that does not consider Queensland Rail's interests, and primarily reflects the users' interests. The 'desirable features' appear to be desirable for one group, without any consideration for impacts on the service provider.

While Queensland Rail theoretically receives some increase in revenue protection due to take or pay, in actuality this benefit is negligible – given the gap between forecast demand and the level of contracted demand for which take or pay applies, Queensland Rail's "losses" from a reduction in ad hoc demand would far outweigh any incremental value offered by the increase in take-or-pay from 80% to 100%.

At the least, the QCA should revise its assumptions and allow for a symmetric treatment of volume triggers. Mirroring the QCA's reasons as stated above, Queensland Rail considers the reference tariff should be revised to reflect lower contracted volumes:

- to mitigate 'uncertainties and their corresponding impact on the level of approved reference tariff'; and
- to manage expectation in the event that economies of density are not achieved, and incentivise users to contract more, otherwise they could face higher reference tariffs.

This would also be consistent with the pricing principles, in particular the requirement that Queensland Rail should be able to recover at least its efficient costs of providing the service.

Queensland Rail does not agree with the QCA's proposal for limiting revenue upside, while retaining Queensland Rail's exposure to downside volume risks. The risk is exacerbated with the QCA's proposal to apply volume trigger to only account for a situation that favours the users. The QCA's one-sided proposed arrangements are unlikely to result in a regulatory regime that can be considered reasonably balanced.

The QCA's proposals are effectively moving Queensland Rail to a situation where its upside is revenue capped but its downside is still treated as a price cap. The QCA is seeking to require a 'heads I win tails you lose' arrangement for Queensland Rail. The QCA cannot achieve this by imposing a revenue cap – if for no other reason than there is no viable regulatory basis upon which to impose a revenue cap regime for coal traffics on the West Moreton Network. The QCA's approach is fundamentally at odds with a price cap form of regulation and results in a material detriment to Queensland Rail. The QCA's approach is also not consistent with the fundamental principles underpinning Part 5 of the QCA Act.

## **7 Metropolitan Network**

### **7.1 Coal trains beyond 2032**

*"The Draft Decision noted a statement in Queensland Rail's submission which indicated that coal trains will not continue through the Metropolitan network beyond 2032 and*

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<sup>40</sup> Queensland Competition Authority (2015), *Draft Decision: Queensland Rail's 2015 Draft Access Undertaking*, October, p.198

*observed that Queensland Rail's capital and maintenance programs did not recognise this 2032 embargo on coal trains.*

*Although B&H's primary analysis was on the basis of coal transport continuing beyond 2032, B&H's analysis suggested a 12 per cent reduction in Queensland Rail's capital program for the scenario where coal transport ceased in 2032. However, the Draft Decision noted that '... our preliminary view, subject to stakeholders' further comments, is to assess Queensland Rail's proposed capital program on the basis that coal transport will continue beyond 2032 (QCA Draft Decision, pp. 186-187).'*

*Stakeholders are requested to comment on this matter."*

Just as there is no 87 train path constraint, there is also no "2032 embargo on coal trains". While a "2032 embargo on coal trains" may have been discussed in correspondence with the Government, it has never been adopted or imposed as a constraint – and may never be. There is simply no basis on which the QCA can treat a discussion of a "2032 embargo" as a legally binding constraint.

Queensland Rail's management of the West Moreton Network and Metropolitan Network is therefore, and quite properly, not based on a "2032 embargo on coal trains".

## **7.2 Metropolitan tariff**

*"New Hope agreed with the QCA's proposed approach for addressing the issue of double counting capital spending between the West Moreton and Metropolitan networks (New Hope, vol. 2, pp. 19-20). Queensland Rail disagreed but proposed to remove the incremental Metropolitan capital expenditure incurred since 2002 (Queensland Rail, pp. 46-47). New Hope also asked how the Metropolitan tariff would be calculated in future undertaking periods (New Hope, vol. 2, pp. 19-20).*

*Stakeholders are requested to make further comments on these submissions."*

Queensland Rail considers that its proposed approach to the Metropolitan Network tariff in the 2015DAU reflects an efficient and reasonable approach, particularly given the challenges involved in separately building up the cost structure for the Metropolitan Network. Up until the draft decision on the 2015DAU, this view was also shared by the QCA.

The QCA, in both its 2014 Consultation Paper and 2014 draft decision, were in favour of extending the West Moreton tariff to the Metropolitan Network, effectively using the West Moreton tariff as a 'proxy' for the Metropolitan tariff. The QCA's proposal sought to lock in the West Moreton Network tariff as a proxy for the Metropolitan tariff, then escalate it without further adjustment. The QCA also proposed that a separate Metropolitan asset base for incremental capital spending would ensure Queensland Rail has the revenue to cover rebates:

*"The QCA said there had been substantial AFD-backed investment in the metropolitan system and a metropolitan asset base for incremental capital spending would provide Queensland Rail with revenue to cover the rebates on those AFDs."<sup>41</sup>*

In proposing a separate Metropolitan asset base for incremental capital spending to allow Queensland Rail to provide rebates for those users who funded capital, the QCA included an element of historical capital for the Metropolitan Network.

Queensland Rail accepted the QCA's 2014 draft decision approach to the Metropolitan Network tariff and incorporated it into the 2015DAU. This included a small amount of historical incremental capital so that rebates on that capital could be paid to end users.

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<sup>41</sup> Queensland Competition Authority (2014), *Draft Decision: Queensland Rail's 2013 Draft Access Undertaking*, October, p.149

However, the QCA in its 2015 draft decision has now alleged a 'double-counting' issue in relation to the inclusion of the historical incremental capital and materially reduced the Metropolitan tariff because of this. The 2015 draft decision proposes to deduct West Moreton assets dating back to 2002 (the date of the first incremental capital in the Metropolitan Network), for the purpose of establishing the asset base for the Metropolitan network, as a way to address the assumed 'double-counting'.

The QCA said that Queensland Rail's proposal to 'inflate' the tariff at the approval date and also apply the Metropolitan incremental charge for prior investments would constitute 'double-counting' of returns, and was not consistent with Queensland Rail's legitimate business interests.<sup>42</sup>

However, in Queensland Rail's view, the QCA's draft decision lacks careful consideration of two important issues:

- The QCA primarily relied on the argument of a 'grandfathering' approach to make its case, without considering the fact that 100% of the access charges attributable to the relevant capital expenditure would be rebated back to users. Given that rebating, double counting simply does not exist.
- The QCA's proposal defeats the purpose of relying on a 'proxy' for efficient costs of providing coal services, to build a tariff structure for the Metropolitan Network. Instead, the QCA has proposed to build up a proxy cost for the Metropolitan Network, combining asset value and costs based on aged network with capital expenditure estimate reflecting coal's allocated share of incremental capital expenditure.

We do not see how the QCA's approach in establishing the Metropolitan tariff can be considered reasonable or consistent with sound economic principles set out in the QCA Act.

The effect of the QCA's draft decision approach to strip out \$301.8m in capital expenditure (prior to applying allocations) for the 18 year period between 2002/03 and 2019/20 in the Metropolitan Network model on the basis of double counting is inappropriate. The so-called double counted capital expenditure related to end-user funded capital expenditure in the Metropolitan Network (subject to rebate) and amounted to \$21.7m (prior to applying allocations) over 18 years, with additions only being present in eight of those years. Clearly subtracting \$16.8m in capital expenditure per annum to provide for an additional \$1.2m per annum is an extreme mismatch and results in an adjusted West Moreton building block model not being an adequate proxy for the Metropolitan Network.

Queensland Rail retains its position as reflected in its earlier submission as a response to the QCA's 2015 draft decision. The QCA's approach is flawed in that the 'proxy' cost build-up no longer represents a reasonable proxy for efficient costs of providing coal services in the Metropolitan Network. In addition, there is no double-counting when the charges attributable to the capital expenditure are to be fully rebated to users.

Queensland Rail additionally retains its proposed approach in the 2014DAU and the 2014 draft decision that the Metropolitan Network reference tariff increase based upon the addition of new incremental capital into the asset base and be escalated annually across regulatory periods. If the QCA moves away from the 2014 draft decision recommendations, then a full DORC asset valuation should be undertaken for the Metropolitan Network and a proper assessment of the network should be undertaken.

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<sup>42</sup> Queensland Competition Authority (2015), *Draft Decision: Queensland Rail's 2015 Draft Access Undertaking*, October, p.203



## 8 Renewals

*“The Draft Decision proposed that the pricing methodology, rates and other inputs for access charges would only vary at renewal for changes in cost or risk (QCA Draft Decision, pp. 60-63). Aurizon said mineral customers would benefit from long-term price certainty but the QCA’s proposed drafting was ‘overly restrictive’ (Aurizon, pp. 20-21). Glencore also questioned locking in the existing tariff approach at renewal and proposed an alternative renewal regime (Glencore, pp. 1–3). Queensland Rail said the QCA’s proposal had the effect of locking in the same price for an access holder that kept renewing its access (Queensland Rail, p. 61).*

*Stakeholders also wanted flexibility in non-price terms at renewal to allow, for example, innovation in train service description, a different origin or destination, or a different amount of access rights (Aurizon, pp. 20-21; Yancoal, p. 4; Glencore, p. 3; New Hope, vol. 3, p. 10).*

*Stakeholders are requested to make further comments on these submissions.”*

Queensland Rail has already made submissions to the QCA in relation to renewals. All of those submissions remain relevant. Queensland Rail has set out below additional submissions to respond to the Request for Comments and to seek to clarify aspects of its prior submissions.

Queensland Rail understands that certainty for access holders regarding the terms on which access rights may be renewed is an important consideration.

Recognising this, Queensland Rail had proposed in the 2015DAU that for genuine access renewals, and in certain circumstances, access holders would be afforded renewal rights. Certainty around price was proposed to be achieved through the limits on price differentiation and in that respect Queensland Rail proposed modification to the price differentiation provisions to allow them to operate where there are no other access seekers or access holders against which the Renewing access seeker could be compared. This was proposed to be done by comparing the proposed access rights and access charges for the Renewing access seeker against the access rights and access charges under the Renewing access seeker’s pre-existing access agreement.

The QCA in its draft decision indicated that it would require significant modifications to renewal provisions, extending their applicability to a broader range of circumstances, and constraining Queensland Rail’s ability to modify access charges in a renewal access agreement.

There are three key concerns with the modifications proposed by the QCA to the renewal provisions set out in the 2015DAU:

- the extent to which the access charge would be “grandfathered” in a renewing access agreement;
- the interplay with the price differentiation pricing principle, and potential impacts on other network participants; and
- whether a “renewal” should allow for changes in train service entitlements or rolling-stock configuration, and if so to what extent.

The QCA has proposed that existing access holders can renew an existing access agreement and that the access charge would remain unaltered, unless there is a difference in Queensland Rail’s “cost or risk” of providing access. This effectively amounts to an evergreen right of renewal for current access holders, and provides assurance that access charges will not change in a broader suite of circumstances than proposed by Queensland

Rail.

The QCA has argued that its approach is needed to provide certainty to access holders. Clearly, it is in users' interests to benefit from a new right, but not the obligation, to be able to renew access rights on essentially unchanged terms. But this one-sided option presents both material commercial difficulties for Queensland Rail, and potentially impacts adversely other network users.

To the extent that circumstances have changed such that a new access agreement would receive a lower access charge – for instance, because network utilisation has increased significantly and common network costs would be shared across a larger volume base – a “renewing” access seeker would simply let their existing agreement lapse, and establish a new access agreement with Queensland Rail on the current terms, including the lower access charge. However, where the access charge for new users would have increased, existing users can effectively lock-in their current charge.

Queensland Rail notes the ACCC's comments, in its final decision on the 2008 ARTC Access Undertaking, where the Commission observed that: “... it is not the purpose of an Undertaking to act as an instrument for improving the terms and conditions of existing access arrangements.”<sup>43</sup> In Queensland Rail's view this is exactly the effect of the QCA's proposed amendments. These would create new rights for existing access holders, not anticipated at the time those access agreements were entered into, and where the cost of meeting these obligations is retained by Queensland Rail, or potentially transferred to other rail users.

Access charges are determined by considering the costs of providing the relevant service, including how those costs may be shared with other existing/anticipated future users. For some traffics, Queensland Rail may have agreed access terms which reflected the economic circumstances of the relevant market, at a point in time. Under the QCA's renewal proposals, there would be no basis for Queensland Rail to revisit access charges, even if the underlying economics of the relevant market had changed significantly.

For instance, a below rail access charge may have been set initially to be competitive with an alternative transport option (such as road transport). Under the QCA's renewal provisions, this access charge would not be able to be revised, even if there was a material change in the cost/performance of this competing mode (such as a shift in the method of heavy vehicle charging). In this scenario there arguably would be no change in Queensland Rail's “cost or risk” for the initial access holder.

We note that Aurizon has recognised that the renewal arrangements need to reflect any relevant factors associated with the initial negotiated price and how these may have changed over time. These circumstances could relate to the end-market commodity prices, the cost/efficiency/availability of a substitute transport mode, or the manner in which common network costs may have been shared with other users.<sup>44</sup>

Moreover, through the operation of the price differentiation provisions, in this situation Queensland Rail would be constrained from entering into a new access agreement with an entirely new access seeker (for the same commodity and in the same geographical area) on contemporary terms. The legacy access terms established for the existing access holder would need to be extended to a new access seeker, to ensure that Queensland Rail does not offend the price differentiation obligations of the Undertaking.

Indeed these provisions would also operate in reverse. Where market conditions have

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<sup>43</sup> Australian Competition and Consumer Commission (2008), *Final decision: Australian Rail Track Corporation Access Undertaking – Interstate Rail Network*, July, p. 58.

<sup>44</sup> Aurizon (2015), *Response to Queensland Competition Authority Draft Decision on Queensland Rail's 2015 Draft Access Undertaking*, p.21

deteriorated, Queensland Rail would not be able to offer lower rail access charges to new access seekers, unless the same terms were extended to existing access holders. This could result in a situation where new traffics are unable to join the network and contribute to the sharing of common network costs.

For this reason, Queensland Rail had sought to incorporate in the 2015DAU two important protections. First, the renewal provisions needed to acknowledge where there was another access seeker for the same commodity and in the same geographical area. Second, access charge differentiation would be permitted where there was a material change in market circumstances. Queensland Rail again requests that the QCA reconsider these issues, noting the concerns identified in this and our earlier submission on the draft decision.

Queensland Rail supports the introduction of innovations that enhance the efficiency and cost-competitiveness of rail. The renewal provisions as proposed by Queensland Rail in the 2015DAU should not be construed as Queensland Rail seeking to limit such improvements.

To this end, Queensland Rail is amenable to modifications that allow for access renewal to accommodate changes in the train service entitlement, and which support efficiency enhancements in above-rail operations. However, this should not be to the commercial detriment of Queensland Rail. Unconstrained flexibility to access holders, including being able to "renew" access for different origin/destination combinations, or for materially different train configurations, can impact on the way in which the network is operated, or risk skewing the way in which shared network costs are allocated and able to be recovered.

Impacts on (non-renewing) access holders also need to be considered. On any shared-user network there are complex interdependencies between different traffics. Queensland Rail's network management plans are designed to support the efficient provision of below-rail access services as required by existing Access Agreements.

In any event, there are existing mechanisms proposed in the 2015DAU that adequately address the issues raised in the Request for Comments. For example:

- a renewal is not the mere extension of the term of an expiring access agreement (although in some circumstances that may be the form it takes) – it fundamentally involves the negotiation of a new access agreement in accordance with terms of the access undertaking. It is therefore possible that the terms of the new access agreement may in some respects be different to the expiring access agreement;
- other processes also exist such as relinquishment and transfer processes; and
- it is also open to an access holder to seek amendments to an access agreement (which Queensland Rail would be obliged to negotiate in good faith).

In addition to the above matters, where there is no competition for access rights, an access holder will naturally have a high degree of flexibility and discretion to be able to negotiate modified access rights. Where competition arises, this flexibility and discretion must necessarily reduce as the renewal mechanism should not be used as a means of extracting commercial advantage over other access seekers in the negotiation of access rights beyond the actual renewal of the existing access rights.

The renewals process should not be a mechanism by which an enduring and evergreen general entitlement to access is created. It should only give a degree of certainty to an access holder in relation to a specific existing investment.

Beyond the term of these contractual obligations, there may be future investments necessary to continue to provide network capacity, if this is required. While Queensland Rail would maintain that it must be able to recover from a renewing access holder at least the incremental cost of continuing to provide capacity, there may be other impacts on non-

renewing access holders. Indeed, an assumption implicit in the QCA's approach is that renewal of existing access rights is a costless exercise for Queensland Rail. In reality, for some networks it is likely renewal of access rights would trigger the need for works to preserve the capacity of the network, or expand in circumstances where other access holders have taken on increased capacity entitlements.

Queensland Rail remains of the view that the appropriate approach is that where an access holder wishes to extend an access agreement, but in doing so modify certain aspects with the potential to impact either on Queensland Rail or other network users, this should be progressed as a new access agreement, in accordance with the processes set out in the 2015DAU.

## 9 Standard Access Agreement (SAA)

For ease of response, the matters referred to in Appendix 2 of the Request for Comment have been set out below followed by any comments that Queensland Rail wishes to make at this time.

***Changes to 2.9.4 of the DAU to provide that Queensland Rail should substantiate reasons why an access seeker's request for access cannot be achieved through altering the terms and conditions of the standard access agreement (see Aurizon, p. 34).***

In substance the practical effect of Aurizon's submission is that:

- the SAA should be indicative only and consequently subject to negotiation by the parties; and
- if Queensland Rail and an "access seeker" are unable to agree to amendments, either party should be able to refer the matter to the QCA as an access dispute for arbitration.

Queensland Rail does not consider that additional amendments are required to the 2015DAU. Both Queensland Rail and access seekers are obliged under the QCA Act to "negotiate in good faith for reaching an access agreement". An approved access undertaking does not supplant those obligations.

The SAA provides a regulatory reference point for the negotiating parties, as it has effect as a regulatory benchmark and for this reason provides regulatory certainty.

Additionally, the SAA is not, in the case of Queensland Rail, about limiting or reducing "the scope of discrimination which might arise between the operations of related party rail operator and those of a competitor". Unlike the Aurizon Group, Queensland Rail does not compete in the above rail market.

In the context of Queensland Rail's West Moreton Network there is a single access holder. In that context it is difficult to see any economic or regulatory justification for a requirement to have a s. Queensland Rail volunteered one that applies across all of its regulated network despite there never having been a need for one in the past.

In all the circumstances we invite the QCA not to pursue any further changes relating to the SAA in respect of this issue.

***Changes to the SAA to include an obligation on Queensland Rail, during the term of an access agreement, to negotiate productivity variations (or variations to train service descriptions) in good faith subject to no financial disadvantage to Queensland Rail (see Aurizon, p. 34; New Hope, vol. 4, p. 6 & cl. 4.2 of New Hope's SAA).***

There is no need to amend the SAA to address these issues because Queensland Rail is already subject to obligations relating to good faith negotiations and unfair differentiation under the QCA Act. A breach of those obligations would entitle either Aurizon or New Hope to pursue the matter as an access dispute through the QCA.

New Hope's submissions on this issue are slightly different from Aurizon's, principally because New Hope also refers to the creation of new Reference Train Services and Reference Tariffs. The QCA has no power to require amendments to an approved access undertaking to introduce a new Reference Train Service or a new Reference Tariff. There is nothing to prevent parties from contracting on a different basis from the Reference Train Service. The draft access undertaking specifically contemplates such a possibility and provides requirements relating to setting access charges in differentiation from the Reference Tariff in those circumstances. Queensland Rail rejects any suggestion that it can be required to include terms in an access agreement requiring it to amend an approved access undertaking.

New Hope has also suggested amendments to clause 4.2 of the QCA's drafting for the SAA. Queensland Rail does not propose to address that drafting in detail in this submission given that it is so patently flawed both in terms of it not being practically implementable but also because it seeks to vest the QCA with powers that it does not have under the QCA Act.

***Removing the interim take-or-pay notices provisions or making these provisions subject to an annual true up (New Hope, vol. 4, p. 6; Aurizon, pp. 49-50).***

The interim take-or-pay notice provisions were intended to provide an as-you-go assessment of take-or-pay liability as it accrues and is adjusted throughout the year. In Queensland Rail's view, any dispute about what train services operated or failed to operate and about the effect of Queensland Rail Cause is better to be had in proximity to the events in question rather than after the fact possibly up to 12 months after the relevant event. This means that events are fresh and more easily analysed and any misunderstanding is addressed early while opportunities may still exist to take remedial action. However, this necessarily entails that those matters are resolved and settled and that they are not re-opened at the end of the year.

It was the QCA's (not Queensland Rail's) proposal to cap take or pay. Queensland Rail has already made submissions in respect of that proposal and repeats and relies on those submissions here.

***Clarifying which party is responsible for take or pay if more than one operator is nominated. This could include, for example, making the access holder liable for all access charges and leaving the payment obligations as between an operator and access holder to the relevant haulage agreement (Queensland Rail, p. 95).***

This is not a matter that requires additional submissions by Queensland Rail at this time.

***Including an obligation on Queensland Rail to consult with operators in relation to changes to the Interface Standards (Aurizon, p. 45).***

The only role that the Interface Standards<sup>45</sup> have under Queensland Rail's proposed access arrangements is in respect of the IRMP. In that regard, for the purpose of developing, reviewing and amending an Interface Risk Assessment, Queensland Rail and the "Operator" will (amongst other matters):

- "(iv) identify the standards, procedures and systems relevant to the management of the identified interface risks;*
- (v) specify the control measures agreed between Queensland Rail and the Operator to manage those Interface Risks as far as reasonably practicable, including:*
  - (A) the relevant Safeworking Procedures and Safety Standards, procedures and systems of each party;*
  - (B) the relevant Rolling Stock and other Interface Standards;*
  - (C) the measures outlined in the Operator's Environmental Investigation and Risk Management Report (EIRMR);*
  - (D) requirements for training, monitoring, awareness, competence and complaint handling; and*
  - (E) the audit, inspection and review regime..."*<sup>46</sup>

Queensland Rail does not consider that consultation on the Interface Standards is warranted given the circumstances in which they are relevant (as outlined above).

In any event, Queensland Rail is not willing to allow an operator to dictate to it what Interface Standards it may adopt – bearing in mind that Aurizon's submission is about requiring Queensland Rail to obtain the endorsement by rolling stock operators for the Interface Standards.

Queensland Rail has already made submissions on the QCA's proposal to impose maintenance obligations on Queensland Rail and will not repeat those submissions here.

***Queensland Rail submits that it is not feasible for an operator to retain the intellectual property collected by Queensland Rail's train control systems (Queensland Rail, p.97).***

This is not a matter that requires additional submissions by Queensland Rail at this time.

***Changes to provide that operators only bear the direct cost of noise mitigation where the most efficient mitigation method is on the train, or where an unusual feature of a particular operator's train triggers the need for mitigation. Otherwise, for mitigation methods which require investment by Queensland Rail (e.g. trackside sound barriers), Queensland Rail to bear the direct cost and recover the cost over time from the relevant train services only (New Hope, vol. 4, p. 7).***

Aside from some types of occasional maintenance activities, the operation of a railway is not itself inherently noisy – rather it is the rolling stock operating on the railway that creates the noise.

Queensland Rail's experience has been that noise mitigation requirements are dynamic and will change over time – and not always in predictable ways. However, it is reasonably likely

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<sup>45</sup> Please note that there is no definition of "Rolling Stock Interface Standards" under Queensland Rail's draft access undertaking (or the QCA's proposed mark up).

<sup>46</sup> Based on the QCA's proposed drafting for the Operating Requirements Manual.

that trains which operate in proximity to residential areas or dwellings, for example, will at some point give rise to noise pollution concerns which may in turn give rise to obligations on Queensland Rail to comply with “noise levels, limits, standards, guidelines or other requirements ... to comply with or observe under any applicable Law”.

It is not practical or efficient for Queensland Rail to build in the costs that it may incur, and the risks it may be exposed to, in undertaking noise mitigation or management measures at the time of executing an access agreement when those costs and risks are essentially unknown at the time of execution.

However, it is not appropriate, commercial or consistent with the QCA Act for Queensland Rail to be required to enter into an access agreement without a mechanism for Queensland Rail to be kept whole in respect of the cost of noise mitigation or management measures that become necessary during the term of an access agreement.

In Queensland Rail’s experience, it will be the infrastructure manager who is, in a practical sense, made responsible for undertaking capital investment in mitigation works or making operational changes (to the extent it is able to do so).

The QCA has consistently approved provisions that permit the recovery of noise mitigation costs from access holders since 2003 – and with little material change to those provisions. Queensland Rail’s proposed provisions are more favourable to access holders than past provisions approved by the QCA. Queensland Rail considers that those provisions are reasonable in the circumstances and consistent with the QCA Act. Importantly, Queensland Rail is committed to consulting with the access holder/operator prior to electing to implement noise mitigation or management measures – rather than merely electing to implement measures without consultation.

Queensland Rail agrees that if the cost for specific noise mitigation or management measures has been included in the build up of a Reference Tariff, then it cannot recover those amounts from the access holder as that would result in double dipping. Queensland Rail’s proposed SAA provisions on noise mitigation do not permit such “double dipping”.

***Amendments to cls. 12.1(a),(b) & (c) to limit the scope of liabilities to the same scope as the benefits which each party receives under the agreement (see New Hope’s SAA, cl. 12.1).***

Queensland Rail is prepared to accept the deletion of “or otherwise in connection with” and insertion of “under” in clauses 12.1(a)(iv), 12.1(b)(iv) and 12.1(c)(iv). Queensland Rail considers that any rights or obligations relating to the actual provision of access must (and should only) be addressed in the relevant access agreement. No such rights or obligations can lawfully be included in an approved access undertaking.

***Queensland Rail submits that if the indemnity for carriage of dangerous goods is deleted, Queensland Rail will be obliged to factor the increased risk into the access charges (Queensland Rail, p. 99).***

This is not a matter that requires additional submissions by Queensland Rail at this time. However, it should be clarified that the indemnity in question reflects a similar indemnity which has been negotiated in relation to the carriage of dangerous goods on the network on previous occasions. By deleting this indemnity, the QCA is changing the risk profile of the SAA (which has not previously applied to the carriage of dangerous goods) in a material way, without any realistic prospect that Queensland Rail can be fully compensated for assuming that risk.

It is also not correct to assert that Queensland Rail is in all cases the party best placed to manage the risk of haulage of dangerous goods. The indemnity specifically includes handling, unloading, escape, release or discharge of dangerous goods, all of which are solely within the control of the operator. Damage arising from the carriage of dangerous goods may be caused or contributed to by the actions of the operator in operating trains, or wagon faults or maintenance failures.

**Removing the 10% threshold in respect of liability for non-provision of access (New Hope's SAA cl. 13.6(d); Glencore, p. 4; Yancoal, p. 4.)**

Under the QCA October 2014 Draft Decision, the QCA stated that:

*“The QCA has considered the risk allocation matrix underpinning rail access agreement principles and SAAs over successive regulatory periods (2001, 2006, 2008 and 2010). In each process the QCA carefully considered any changes to the regulatory regime, amendments to the SAAs and all relevant submissions to seek to ensure the risk allocation matrix within the SAAs reflected the criteria in the QCA Act and the risk allocation matrix established in the relevant approved access undertaking.”*

The QCA also noted that:

*“The QCA's approved risk allocation matrix in the 2010 Aurizon Network access undertaking resulted primarily in a symmetrical risk allocation with both parties being held responsible for risks within their immediate control. This symmetrical risk allocation is mirrored in each SAA developed by Aurizon Network, including the access holder agreement, the split form of access agreement and the connection agreement.*

*The application of a symmetrical risk allocation matrix is the most efficient contracting approach...”*

and that:

*“The QCA is of the view that Aurizon Network's 2010 access principles and SAAs are the most fully considered regulatory precedent in Queensland that appropriately balances risks and responsibilities between the parties. Given this, the QCA's draft position is that any Queensland Rail deviations from the provisions in Aurizon Network's 2010 undertaking must be fully considered by the QCA, consistent with the QCA Act. In particular, the QCA is looking for Queensland Rail to adequately demonstrate that there are sufficient reasons for specific cost and risk differences in its operations over the 2013 regulatory period to justify a change to the past arrangements.”*

Ultimately on the specific subject of limitations on liability the QCA's October 2014 Draft Decision proposed that:

*“The QCA requires Queensland Rail to amend its proposal so that it deletes the limitation of liability provisions in its access agreement principles and restores the liability provisions (cl. 15) contained in Schedule E of the Aurizon Network 2010 access undertaking.”*

The QCA likewise in terms of the SAA proposed that Queensland Rail “adopt the drafting of the body of Aurizon Network's operator access agreement for coal traffic”.

The QCA clearly considered that the application of an “Allowable Threshold” was appropriate in the context of a limitation on liability for non-provision of access. In the past that “Allowable Threshold” was left to be agreed between the parties in negotiations. Where



Queensland Rail's proposed SAA differs from the past SAA approved by the QCA is that Queensland Rail's SAA seeks to hardwire 10% as the "Allowable Threshold".

Queensland Rail has proposed hardwiring 10% as this is the figure that has been agreed and included in access agreements universally and consistently over many years as the Allowable Threshold. Queensland Rail therefore proposes that this be the 'standard' – which is not to say that parties might not still potentially negotiate terms different from that standard.

If the QCA wishes to now embark on a process of re-opening the risk allocation matrix for the SAA, then the QCA cannot merely re-open one aspect in a way detrimental to Queensland Rail without a broader re-opening including increasing the WACC to reflect the increased risk to which Queensland Rail is being exposed.

Queensland Rail notes that there has been a suggestion that the application of a threshold encourages an over-contracting behaviour on the part of customers or access holders. However, such assertions are not supported by any empirical analysis of contracting behaviour over the many years that a threshold has applied in relation to the declared service.

Queensland Rail's proposal is entirely consistent with regulatory precedent and the QCA's past requirements. In addition, the hardwiring of a 10% threshold does not affect the ability of the parties to negotiate a different threshold if they choose.

**Aurizon has submitted a proposed revision to the Insurance provisions (Aurizon, pp. 56-58).**

In general terms, Aurizon has claimed that various aspects of the proposed insurance provisions for the SAA are not practical, reasonable or feasible. Aurizon has proposed specific amendments to clause 16 of the SAA.

Queensland Rail's comments are set out below.

### **Clause 16.1**

#### ***Aurizon Drafting***

~~insurance in accordance with Prudent Practices having regard to the Operator's activities and works, obligations and responsibilities under this agreement (including insurances covering all risks of an insurable nature in respect of which the Operator is obliged to indemnify Queensland Rail under this agreement) provided that such insurances must include (without limitation):~~

Queensland Rail accepts the deletion of "without limitation".

However, Queensland Rail does not accept the remaining deletions and amendments. The matters deleted are all relevant in determining the relevant insurance.

The critical aspect of the provision is what insurance would be "in accordance with Prudent Practices". This is an objective test and regard should be had to all of the matters referred to – without Aurizon's deletions.

Queensland Rail acknowledges that in some cases it is possible that it may not be practical to obtain certain insurance and may therefore not be insurance in accordance with "Prudent Practices". Aurizon's provision unnecessarily constrains the provisions by focusing the enquiry solely on the activities and works of the Operator.

### **Aurizon Drafting**

- (c) a public liability policy of insurance:
  - (i) that covers the Operator ~~and each of the Operator's agents, consultants, contractors and their sub-contractors (each an Insured Party)~~;
  - (ii) for an amount of not less than \$350 million per occurrence;
  - (iii) the coverage of which includes ~~(without limitation)~~ .....
    - (A) the rights, interests and liability in respect of any Claim against an Insured Party arising out of:
      - (1) any damage or loss occurring to any property ~~(except property of insurance?)~~; and
      - (2) injury (including death) to any person ~~(except employees?)~~.

Queensland Rail accepts the deletion of “without limitation”.

It is not unusual for a public liability insurance requirement to make it clear that the insurance should extend to a party’s “agents, consultants, contractors and sub-contractors”.

Aurizon is effectively claiming that if it were to contract out any of its activities that the public liability insurance should not extend to the activities undertaken by those contractors for Aurizon. However, Queensland Rail neither has any say in the engagement of those contractors nor any contractual relationship with them.

How Aurizon might elect to exercise rights and comply with its obligations is in large part a matter for Aurizon – but Queensland Rail should not be exposed to risk by Aurizon’s choices in that regard. The public liability insurance should rightly extend to agents, consultants, contractors and sub-contractors. The extent to which Aurizon might back-to-back its insurance obligations in its arrangements with those parties is a matter for Aurizon.

The parties could agree something different – for example, where the “Operator” agreed to express obligations not to use agents, consultants, contractors or sub-contractors.

Queensland Rail does not understand or accept Aurizon’s other proposed amendments.

### **Aurizon Drafting**

~~that has a maximum deductible for any one claim of \$500,000;~~

In respect of both public liability insurance and carrier liability insurance, Aurizon proposes the deletion of the maximum deductible.

Queensland Rail had considered the deductible of \$500,000 was reasonable.

Under Aurizon’s proposal, it appears that the deductible could be anything. Taken to an extreme, it is not clear whether Aurizon is intending that the deductible could be set at so high a level as to defeat the purpose of having insurance provisions in the first place.

Some statement of the maximum deductible needs to be included.

### **Aurizon Drafting**

- (e) ~~all other insurances that the Operator or the Operator's agents, consultants, contractors and their sub-contractors are is required by Law to hold in relation to or in connection with the exercise of rights ~~or the performance of obligations~~ under this agreement.~~

As with public liability insurance above, if Aurizon wishes to use agents, consultants, contractors or sub-contractors in the exercise of rights or performance of obligations under an access agreement, then Aurizon should assume the responsibility for ensuring all relevant insurances are held.

The parties could agree something different – for example, where the “Operator” agreed to express obligations not to use agents, consultants, contractors or sub-contractors.

In relation to Aurizon’s deletion of “or the performance of obligations”, Queensland Rail does not accept that amendment. The performance of an obligation is something very different from the exercise of a right, but is still something that may very well “by Law” require insurance.

### **Clause 16.3**

#### **Aurizon Drafting**

~~The Access Holder and the Operator must ensure that their respective Insurance effected and maintained in accordance with clause 16.1 or 16.2 is with an insurer having an insurance financial strength rating of “A” or better by Standard & Poor’s or similar agency if Standard & Poor’s ceases to exist or to provide such ratings, the rating which most closely corresponds to that rating by another agency or person which is recognised in global financial markets as a major ratings agency.~~

Queensland Rail considers that Standard & Poor’s is an appropriate rating agency. Queensland Rail’s drafting appropriately addressed the unlikely event of Standard & Poor’s ceasing to exist or to provide such rating. By contrast, Aurizon’s drafting is ineffective and contractually uncertain.

### **Clause 16.4**

#### **Aurizon Drafting**

- (b) ~~not contain any exclusions, endorsements or alterations to the accepted policy wording that adversely amends the cover provided without the written consent of Queensland Rail (which consent must not be unreasonably withheld or delayed).~~

Queensland Rail accepts this amendment.

### **Clause 16.7(a)**

Queensland Rail notes that Aurizon’s submission appears to include an undisclosed comment in relation to clause 16.7(a). As Queensland Rail does not know the nature of this comment, it cannot make any response in relation to it.

### **Clause 16.9**

#### **Aurizon Drafting**

- (i) ~~notify Queensland Rail as soon as practicable after the occurrence of any claim under their respective Insurance (including providing reasonable details of the claim relevant to the this agreement); and~~

Queensland Rail agrees in principle with such an amendment, but proposes that the words to be added should be “*relevant to or arising out of the subject matter of this agreement*”.

***Changes to provide that the material change clauses should only apply to non-reference tariff train services (or otherwise be subject to QCA approval) (New Hope, vol. 4, pp. 6-7).***

It was not Queensland Rail’s intention to circumvent Reference Tariffs. Queensland Rail agrees that where Reference Tariffs apply and access agreements have access charges that are linked to the Reference Tariffs, then in principal the Reference Tariffs could be the mechanism through which Queensland Rail is kept whole if there is a “Material Change”.

The draft access undertaking specifically provides for a change to Reference Tariffs where there is an Endorsed Variation Event. However, the Endorsed Variation Event relating to “a Change in Law, Change to Credit or Impost Change” (that is a “Material Change”) is subject to a threshold of a 2.5% change in cost. The imposition of such a threshold will result in Queensland Rail potentially bearing costs that it cannot recover or which eat away at Queensland Rail’s regulatory return – either result is inconsistent with the QCA Act.

Queensland Rail is satisfied that the provision under the SAA for an “Adjustment for a Material Change” – numbered clause 18.2 in the QCA draft decision – could, with some amendments, be made to not apply where a Reference Tariff applies to the relevant train services. However, the percentage threshold applying to an Endorsed Variation Event should be removed.

***Changes to the material change clause so that it only permits a review of access charges for a change in government funding where the access charge is below the revenue floor limit. Also, Queensland Rail to provide an access holder of the term of relevant TSC funding and an access holder should be able to terminate the access agreement where changes to access charges due to a material change make the agreement uneconomic (see Aurizon, pp. 48-49).***

Under the QCA Act, Queensland Rail is obliged to negotiate with an access seeker in good faith and to provide information to that access seeker, including in relation to the calculation of access charges. Queensland Rail’s ability to disclose information about the TSC is subject to any confidentiality requirements. Queensland Rail should not be under a contractual obligation to provide such information

Queensland Rail agrees that the SAA could be amended to allow the access holder to terminate the access agreement within 20 business days after being notified of a change to an access charge resulting from a “Material Change”, provided Queensland Rail has the same right. The term ‘uneconomic’ is uncertain.

***New Hope has proposed amendments to cl. 21 which it consider better reflect the way that the Western System operates (including ABCD scheduling) (New Hope’s SAA, cl. 21.1(a)(i)).***

New Hope’s proposal appears to essentially be that a reduction or resumption of access rights can occur where the access holder has not used at least 85% of the train services allowed under its access agreement over a 12 month period, other than due to force majeure events or a failure of Queensland Rail to make the access rights available.

Under this proposal:

- It would be necessary to look back over a one year period. This could potentially result in substantial delays in being able to act efficiently to reallocate capacity. However, provided Queensland Rail is permitted to hold 12 months security for take or pay obligations, this should not adversely impact directly on Queensland Rail. If such security is not permitted, then the change should not be approved by the QCA.
- Access seekers are encouraged to over contract (so long as they are willing to take a risk on take or pay) as they only need to use 85% of their contracted access rights to avoid a reduction in their access rights. This could potentially be gamed to push new entrants towards expansions or, if expansions are not economically feasible, to prevent new entrants or to exploit a secondary market.
- Any failure by Queensland Rail to make the access rights available is excluded. There could be a wide variety of reasons why Queensland Rail might not “make the access rights available” including, for example, due to some act or failure on the part of the access holder or its operator. There are no reasonable limits around this exclusion.

*Changes to provide that, where an operator is seeking to implement certain operational efficiencies, relinquishment fees associated with a variance to train service entitlements and rolling stock configurations should be capped to the variation to access revenue arising from that change (Aurizon, pp. 34-35).*

Queensland Rail does not understand the issue or concern raised in this paragraph. The “Relinquishment Fee” calculation has the effect described above. No changes are needed.

*Queensland Rail has submitted that reference to a BBB- S&P rating in the definition of “Acceptable Credit Rating” is not a suitable minimum (Queensland Rail, p. 102).*

This is not a matter that requires additional submissions by Queensland Rail at this time.

*Queensland Rail has proposed to insert a new clause into the Standard Access Agreement headed “Ad Hoc Train Services” (cl. 7.3 of Queensland Rail’s SAA (Annexure 5 to Queensland Rail’s December submission)).*

This is not a matter that requires additional submissions by Queensland Rail at this time.

## 10 Additional matters

In the time permitted by the QCA, Queensland Rail has focused its analysis on the matters raised in the Request for Comments and its analysis of the QCA’s reference tariff model. However, some specific matters raised by stakeholders have come to Queensland Rail’s attention in respect of which it felt compelled to make some brief comment.

**Please note** that if this submission does not address a matter raised by stakeholders in submissions that does not mean that Queensland Rail agrees with or accepts that matter.

### 10.1 Connecting to the Network (Section 1.6)

New Hope proposes a number of amendments to the 2015DAU in relation to “Connecting to the Network”. Queensland Rail does not accept that those amendments are necessary or

appropriate or consistent with the QCA Act, the scope of the declared service or the QCA's powers under the QCA Act.

For example, New Hope proposes that the 2015DAU be amended to include a requirement that Queensland Rail develop a "Standard Rail Connection Agreement". The requirement for a "Standard Rail Connection Agreement" is inconsistent with the QCA Act and, in any event, is not something that the QCA can require or subsequently approve under the QCA Act.

## **10.2 Amendments for unanticipated inequity or unfairness (Section 1.7)**

New Hope proposes that the 2015DAU be amended to permit the QCA to require an amendment to the undertaking to *'rectify a significant inequity or significant unfairness'*. The QCA Act sets out in the circumstances in which the QCA can require amendments to an approved access undertaking. New Hope's proposal is utterly at odds with the QCA Act and the QCA's powers under the QCA Act

## **10.3 Definition of 'Access' (Section 7.1)**

The definition of Access proposed in the 2015DAU is consistent with the scope of the declared service. There is no basis for introducing additional words in the definition of "Access". Any attempt to do so effectively changes the scope of the declared service under the QCA Act.

The additions to the definitions proposed by Aurizon and New Hope introduce complexity where none is needed and attempt to extend that scope, with the only justification being the desire to shift the cost of providing ancillary services from access holders to Queensland Rail, without a corresponding increase in access charges.

The amendments proposed by Aurizon and New Hope are not appropriate or necessary because the scope of the declared service under the QCA Act (as reflected in the definition of "Access") already includes those matters or because the proposed amendments change or potentially change the scope of the declared service.

The 2015DAU definition of "Access" is consistent with the declared service under the QCA Act and therefore should be accepted by the QCA.

## **10.4 Cost Recovery (Draft Decision 2.10-2.12)**

Queensland Rail should be entitled to recover its costs for failed negotiations for access.

## **10.5 Competing Access Requests (Draft Decision clause 2.16-2.18)**

The amendment proposed by New Hope that the time an access application is lodged and the access seeker who is ready and willing should be the primary determinants in the order of the queue are inappropriate. While these are matters that should be part of the consideration, the overall commercial value that the access seeker is to provide must also be considered (e.g. length of haul, overall NPV contribution etc).

## **10.6 Definition of Urgent Possession (Section 7.1 and SAA)**

New Hope seeks to remove the concept of Urgent Possessions from the 2015DAU and the SAA. However, inclusion of the concept of Urgent Possessions is essential for safety reasons. Urgent Possession means a Possession:

- (a) that is required to correct problems in relation to the Network that are considered by Queensland Rail to be potentially dangerous to persons or property; and
- (b) that Queensland Rail intends to carry out within less than three months after the detection of the problem,

other than an Emergency Possession.

New Hope believes that all such possessions should be dealt with within five days. However, this would result in the inefficient running of the Network as this type of matter is not of such urgency that it requires treatment within 5 days.

#### **10.7 Other matters**

Queensland Rail has also identified some other issues relating to proposed amendments to the SAA and briefly outlines these in Attachment 5.

## Glossary

2008AU	QR Network's 2008 access undertaking (which applies to Queensland Rail, with some modifications, in accordance with the Asset Disposal Act)
2012DAU	Queensland Rail's 2012 draft access undertaking
2013DAU	Queensland Rail's 2013 draft access undertaking
2015DAU	Queensland Rail's 2015 draft access undertaking
AFD	Access Facilitation Deed
Aurizon Network	Aurizon Network Pty Ltd
Asset Disposal Act	<i>Infrastructure Investment (Asset Restructuring and Disposal) Act 2009</i> (Qld)
B&H	B&H Strategic Services
DTMR	The Queensland Department of Transport and Main Roads
PwC	PricewaterhouseCoopers Australia
QR Network	QR Network Pty Ltd (now Aurizon Network)
QCA	Queensland Competition Authority
QCA Act	<i>Queensland Competition Authority Act 1997</i> (Qld)
Queensland Rail	Queensland Rail Limited
Request for Comments	The QCA's paper entitled: "Queensland Rail's 2015DAU – Request for Comment – Following submissions on Draft Decision"
SAA	The Standard Access Agreement that forms part of the 2015DAU



# Attachment 1: Cost Categorisation Table

West Moreton Maintenance Plan 2015/2020 Budget		FY16 (\$'000)			FY17 (\$'000)			FY18 (\$'000)			FY19 (\$'000)			FY20 (\$'000)		
Discipline	Product Description (\$'000)	Common	Coal Fixed	Variable	Common	Coal Fixed	Variable	Common	Coal Fixed	Variable	Common	Coal Fixed	Variable	Common	Coal Fixed	Variable
<b>TRACK AND CIVIL INFRASTRUCTURE</b>																
	Repairs Concrete Bridges	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Repairs Steel Bridges	47	190	0	50	200	0	50	200	0	50	200	0	50	200	0
	Repairs Timber Bridges	700	881	0	700	426	0	700	373	0	700	321	0	700	766	0
	Steel Bridge Paint (Contract)	0	0	0	0	0	0	5700	0	0	0	0	0	0	0	500
	Structures Inspection	496	124	0	194	49	0	319	80	0	194	49	0	399	303	0
	Structures Pest Control	15	0	0	15	0	0	15	0	0	15	0	0	15	0	0
	Drainage Construction	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Drainage Maintenance	364	0	0	275	0	0	375	0	0	275	0	0	375	0	0
	Retaining Wall Maintenance	0	0	0	20	0	0	20	0	0	20	0	0	20	0	0
	<b>Structures and Civil Total</b>	1972	1195	0	1254	675	0	7179	653	0	1254	570	0	1559	1769	0
	Ballast Undercutting Other	600	570	0	600	800	0	600	800	0	600	800	0	600	800	0
	<b>Ballast Undercutting Total</b>	600	570	0	600	800	0	600	800	0	600	800	0	600	800	0
	Earthworks - Non Formation	15	0	0	150	0	0	150	0	0	100	0	0	100	0	0
	<b>Earthworks Total</b>	15	0	0	150	0	0	150	0	0	100	0	0	100	0	0
	Minor Yard Maintenance	130	100	0	130	100	0	130	100	0	130	100	0	130	100	0
	Rail Joint Management	300	0	1341	300	0	1220	300	0	960	300	0	750	300	0	750
	Rail Renewal	0	931	0	0	931	0	0	931	0	0	931	0	0	931	0
	Turnout Maintenance	75	0	75	75	0	75	75	0	75	75	0	75	75	0	75
	Mechanised Resleeper	13067	3267	0	0	0	0	0	0	0	0	0	0	0	0	0
	Monument/Signage Mice	60	297	0	60	300	0	60	0	0	60	0	0	60	0	0
	Maintenance Ballast	800	0	235	435	0	255	435	0	225	435	0	195	435	0	185
	Sleeper Management	300	75	0	175	50	0	290	70	0	450	90	0	800	280	0
	Fire & Vegetation Mgmt	1391	0	0	1400	0	0	1400	0	0	1400	0	0	1400	0	0
	Rail Stress Adjustment	300	494	0	300	490	0	300	490	0	300	490	0	300	490	0
	Track Inspection	781	0	0	785	0	0	785	0	0	785	0	0	785	0	0
	Rail Lubrication	100	0	156	100	0	160	100	0	160	100	0	160	100	0	160
	Top & Line Spot Resurfacing	600	0	772	600	0	770	600	0	770	600	0	770	600	0	770
	Rail Repair	250	0	1298	250	0	1000	250	0	900	250	0	830	250	0	830
	<b>Track Maintenance Total</b>	18154	5164	3877	4610	1871	3480	4725	1591	3090	4885	1611	2780	5235	1801	2770
	Mechanised Resurfacing	1000	0	2000	1000	0	1950	1000	0	1900	1000	0	1850	1000	0	1800
	Mech Resurfacing Turnouts	0	0	0	30	0	60	30	0	60	30	0	60	30	0	60
	<b>Resurfacing Total</b>	1000	0	2000	1030	0	2010	1030	0	1960	1030	0	1910	1030	0	1860
	Rail Grinding - Mainline	0	683	0	0	391	0	654	0	0	391	0	0	654	0	0
	Rail Grinding - Turnouts	0	98	0	0	91	0	175	0	0	105	0	0	84	0	0
	<b>Rail Grinding Total</b>	0	781	0	0	482	0	829	0	0	496	0	0	738	0	0
	Track Geometry Recording	151	0	0	151	0	0	151	0	0	151	0	0	151	0	0
	Ultrasonic Test Ontrack Mach	0	0	200	0	0	200	0	0	200	0	0	200	0	0	200
	Ultra Sonic Testing (Manual)	32	32	0	32	33	0	32	33	0	32	33	0	32	33	0
	<b>Track Monitoring Total</b>	183	32	200	183	33	200	183	33	200	183	33	200	183	33	200
	<b>TRACK AND CIVIL Total</b>	21924	7742	6077	7827	3861	5690	13867	3906	5250	8052	3510	4890	8707	5141	4830
<b>FACILITIES MAINTENANCE</b>																
	Fencing	50	0	0	50	0	0	50	0	0	50	0	0	50	0	0
	Level crossing maintenance	50	0	-50	50	0	50	50	0	50	50	0	50	50	0	50
	Level crossing constr/recond	0	569	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>FACILITIES Total</b>	100	569	-50	100	0	50	100	0	50	100	0	50	100	0	50
<b>SIGNALLING</b>																
	Preventative Telecoms	103	0	0	108	0	0	108	0	0	108	0	0	108	0	0
	Phone/Data Maintenance	5	0	0	6	0	0	6	0	0	6	0	0	6	0	0
	<b>Telecommunications Total</b>	108	0	0	114	0	0	114	0	0	114	0	0	114	0	0
	Prevent Signalling Field Mtce	821	0	0	823	0	0	823	0	0	823	0	0	823	0	0
	Correct Signalling Field Mtce	190	47	0	190	51	0	180	48	0	172	43	0	162	41	0
	Signalling Level Xing Protect	513	0	0	519	0	0	519	0	0	519	0	0	519	0	0
	Cable Route Maintenance	196	0	0	196	0	0	196	0	0	196	0	0	196	0	0
	Signalling Train Protect System	51	0	0	51	0	0	51	0	0	51	0	0	51	0	0
	Wayside Monitoring System	55	0	0	61	0	0	61	0	0	61	0	0	61	0	0
	<b>Signal Maintenance Total</b>	1826	47	0	1840	51	0	1830	48	0	1822	43	0	1812	41	0
	<b>SIGNALLING Total</b>	1934	47	0	1954	51	0	1944	48	0	1936	43	0	1926	41	0
	<b>Sub-Total Maintenance</b>	23958	8358	6027	9881	3912	5740	15911	3954	5300	10088	3553	4940	10733	5182	4880
<b>General</b>																
	Inventory & Minor Asset Mgmt	116	0	0	116	0	0	116	0	0	116	0	0	116	0	0
	Consulting/Technical Advice	50	330	0	50	330	0	50	330	0	50	330	0	50	330	0
	Asset Management	400	225	0	400	220	0	400	220	0	400	220	0	400	220	0
	Project Mgmt & Services	30	29	0	30	29	0	30	29	0	30	29	0	30	29	0
	<b>GENERAL Total</b>	596	584	0	596	579	0	596	579	0	596	579	0	596	579	0
	<b>GRAND TOTAL</b>	24554	8942	6027	10477	4491	5740	16507	4533	5300	10684	4132	4940	11329	5761	4880
		62.1%	22.6%	15.2%	50.6%	21.7%	27.7%	62.7%	17.2%	20.1%	54.1%	20.9%	25.0%	51.6%	26.2%	22.2%

## **Attachment 2: Synergies– Queensland Rail’s Cost Allocation Methodology: A Review**



# **Queensland Rail's Cost Allocation Methodology: A Review**

A report to Queensland Rail responding to QCA's Draft Decision on  
Queensland Rail's 2015 DAU Proposal

March 2016

Synergies Economic Consulting Pty Ltd  
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## Executive Summary

In its Draft Decision on the 2015 DAU proposal, the QCA has recommended an approach for allocating Queensland Rail's forward looking operating, maintenance and asset renewal costs that differs substantially from both Queensland Rail's 2015 DAU proposal and from the QCA's 2014 Draft Decision. Specifically, it has proposed that:

- each forward looking cost category is separated into fixed and variable elements;
- the variable costs are allocated according to forecast usage, based on forecast gtk; and
- the fixed costs are allocated based on the capacity that is available for contracting by that group of services.

The Queensland Competition Authority Act 1997 (QCA Act) specifies its objective as being to promote the economically efficient operation of, use of and investment in, significant infrastructure by which services are provided, with the effect of promoting effective competition in upstream and downstream markets. Further, section 168A of the Act specifies pricing principles that must be observed, including that Queensland Rail be able to generate expected revenue for the service that is at least enough to meet the efficient costs of providing access to the service and include a return on investment commensurate with the regulatory and commercial risks involved, and allow for multi-part pricing and price discrimination where it aids efficiency. Therefore, any cost allocation methodology must be considered in the context of these requirements.

Queensland Rail has sought that Synergies assess the effectiveness of the QCA Draft Decision recommendations in meeting these requirements.

### Categorisation of costs

The categorisation of costs into fixed and variable components is intended to identify the costs that vary with tonnage, as compared to those costs that are fixed for a given standard to which the track must be maintained. However, the QCA approach is flawed as a simple categorisation of costs as fixed or variable across the West Moreton Network as a whole does not reveal whether the measured fixed costs would necessarily be incurred if the system were required only to provide non-coal services. An analysis of Queensland Rail's historic cost data indicates that the level of fixed costs for track designed solely to carry its non-coal services (which are generally light weight and limited in number) would be materially lower than the level of fixed costs for track designed to also carry coal services, which cause significantly greater train numbers and far greater train loadings and gross tonnages.

Therefore, the separation of costs into their fixed and variable components using the approach proposed by the QCA does not support an efficient allocation of costs and will not result in efficient prices, as prices for non-coal services that will be higher than efficient levels because they would include costs associated with a higher standard of rail infrastructure than they need. In contrast, the prices for coal services would be lower than is efficient because revenue from non-coal services would contribute to the maintenance of the standard that only the coal service customers require.

In Synergies view, if the QCA is to progress down a path of cost categorisation, a more sophisticated approach is required, one that fully reflects the different maintenance and renewal works needed to support different types of demand, to ensure that prices for different categories of service are efficient, including that they allow Queensland Rail to recover enough revenue to meet its efficient costs. Synergies considers that this would be better achieved by categorisation of costs into common costs, coal fixed costs and variable costs.

### **Allocation of costs**

Variable costs should be allocated according to the most relevant variable cost driver. As discussed above, the main factor that influences variable maintenance costs is gross tonnage/km, so allocating variable costs to coal and non-coal services on the basis of forecast gtk, as recommended by the QCA, will reflect the most efficient approach.

In relation to the QCA's requirement that fixed costs be allocated between coal and non-coal users on the basis of their potential share of maximum installed capacity, Synergies considers that there is no robust economic justification for this approach.

Coal fixed costs form part of the service incremental cost relating to the operation of coal services, and should be allocated in full to coal users. This applies to both coal fixed maintenance and coal fixed capex costs, noting that Queensland Rail has not identified any coal fixed operating costs.

For common costs, which are necessarily incurred in providing for any regular services to operate on the network, whether they be coal or non-coal services, there is no simple allocation rule based on gtk or train paths alone, that would result in the efficient allocation of these shared costs to each of the services. These common costs contribute to multiple services, cannot be split, and cannot be efficiently allocated based on a simple quantity rule.

As a result, there is no justification for allocating these costs on 'share of available capacity' using the QCA's rationale that coal users should not be required to pay for services that they cannot contract. Rather, the QCA's view appears to be based more

on a concept of fairness rather than on economic principles, as indicated by its comments in relation to Queensland Rail's proposed allocation of operating costs:<sup>1</sup>

Our view is that coal services would then have paid more than their fair share of operating costs.

However, this approach will have significant negative consequences on efficient incentives for the operation of, use of and investment in the rail network, to the extent that Synergies considers that the cost allocation rule is inconsistent with achieving the objectives of the Act. In particular:

- it does not recognise the nature of cost drivers in an industry that exhibits a decreasing marginal cost such as rail infrastructure, as it effectively treats common future costs as if, in the long term, they are fully variable according to installed paths;
- recognising that this cost allocation approach is directly used to set prices, it does not reflect the principles of economic theory in relation to setting efficient prices in a declining cost business, and the requirements that must be met to ensure cross subsidies do not occur;
- given only 3 of the allocated 35 non-coal paths are used by non-coal services, with the remaining paths unused, this effectively allows Queensland Rail no prospect of recovering the QCA's assessed efficient common costs of providing the infrastructure from the users of the service;
- it prevents efficient signals being given to Queensland Rail in relation to the future maintenance and renewal of the infrastructure that is essential for the ongoing provision of coal services, as it will not have a business case that anticipates full recovery of these future costs; and
- it does not comply with the QCA Act's pricing principles which entitle Queensland Rail to "generate expected revenue for the service that is at least enough to meet the efficient costs of providing access to the service"

While the QCA is required under the Act to consider the legitimate interests of users, this does not warrant a departure from the legislated pricing principles under the Act.

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<sup>1</sup> Queensland Competition Authority (October 2015), Draft Decision on Queensland Rail's 2015 Draft Access Undertaking, p158

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# 1 Background and context

## 1.1 Background

Queensland Rail's network is declared for third party access under Part 5 of the Queensland Competition Authority (QCA) Act 1997. The QCA Act provides for the access provider to submit an access undertaking to the QCA for approval, setting out the terms and conditions on which it will negotiate and provide access. In May 2015, Queensland Rail submitted to the QCA its 2015 Draft Access Undertaking (DAU) proposal. The 2015 DAU included proposed reference tariffs for application to coal services operating in the West Moreton system, which traverse the West Moreton and Metropolitan Networks on their journey to the Port of Brisbane.

In October 2015, the QCA released its Draft Decision on Queensland Rail's 2015 DAU proposal.

## 1.2 Issue

The West Moreton Network was originally built in the late 19<sup>th</sup> and early 20<sup>th</sup> century to carry passenger, livestock, freight and agricultural products. Substantial volumes of coal haulage commenced on the West Moreton Network in 1994, with volumes progressively increasing as mines were developed and/or expanded, although these volumes have reduced since the recent closure of Wilkie Creek mine.

In developing proposed reference tariffs for the 2010 amendments to the 2008 AU and for the 2015 DAU, Queensland Rail proposed an approach of allocating costs between coal and non-coal services that allowed it to then develop a building block model for coal services. The approach aimed to recognise that:

- the mixed use nature of this system; and
- that its track quality is lower than would be expected of a purpose built heavy haul coal system.

For the 2015 DAU, Queensland Rail proposed to allocate the forward looking costs associated with the West Moreton Network as follows:

- maintenance costs allocated according to forecast gross tonne kilometres (gtk) usage of the network;
- operating costs allocated according to forecast train path usage of the network; and

- future asset renewal capital costs allocated according to forecast train path usage of the network.

We note that Queensland Rail did not forecast any capacity enhancement capex over the term of the 2015 DAU, but did propose that capacity enhancement capex be recovered from the users that triggered the need for the capacity enhancement.

This proposed allocation approach for maintenance and operating costs is consistent with the methodology that was used in establishing the 2010 reference tariffs, and is also consistent with the approach recommended by the QCA in its 2014 Draft Decision on Queensland Rail's 2013 DAU proposal.

However, in its Draft Decision on the 2015 DAU proposal, the QCA has recommended significant changes in the approach for allocating these forward looking costs that differs substantially from both Queensland Rail's proposal and from the QCA's 2014 Draft Decisions. Specifically, it has proposed that:

- each forward looking cost category is separated into fixed and variable elements;
- the variable costs are allocated according to forecast usage, based on forecast gtk; and
- the fixed costs are allocated based on the capacity that is available for contracting by that group of services.

### **1.3 Purpose of this report**

Given the significance of the change in approach proposed by the QCA, Queensland Rail has requested that Synergies Economic Consulting (Synergies) prepare a report that examines the validity of the QCA's approach, and specifically, to consider:

- the effectiveness of the QCA's recommended approach of categorising costs into fixed and variable components in supporting an efficient allocation of costs; and
- the effectiveness of the QCA's recommended approach for allocating the variable and fixed cost components in supporting the QCA Act objectives and complying with the legislated pricing principles.

Synergies has not been commissioned to determine the percentage of costs that will need to be recovered by Queensland Rail through the West Moreton Network coal reference tariff to recover at least its efficient costs.

As a necessary prelude to this consideration, the report first describes the nature of maintenance, operating and asset renewal costs in section 2, and then sets out the essential link between cost causation and cost categorisation in section 3.

## **2 Maintenance and asset renewal costs**

Typically, the costs of providing rail network operations, maintenance and renewal will vary with changes in the underlying use of the network. The extent to which the costs change in response to changes in usage will vary typically vary from service to service and, because demand for rail access services is heterogeneous in nature, in accordance with changes in the mix of services operated. If the costs of operations, maintenance and renewal are completely invariant with usage, they are fixed; if they change with usage they are variable. The costs of most services comprise a mix of cost components that are fixed and variable.

Cost allocation is the process of identifying the nature of the underlying costs in these terms, and then selecting an appropriate rule for allocating the resultant costs into the prices of different network services to different network users. In this instance and as a general rule, cost allocation will result in efficient prices where it reflects, to the maximum extent possible, the causation of costs incurred in maintaining, operating and renewing the network, that is, the impactor pays the costs. Efficient prices in this context means prices for network services most likely to foster efficient use of, operation of and investment in the network.

Therefore, prior to considering the effectiveness of the QCA's recommended allocation methodology, it is first necessary to review the nature of these costs, and their key cost drivers.

### **2.1 Nature of railway maintenance and asset renewal costs**

In order to assess the key drivers of maintenance and asset renewal costs, it is necessary to understand how these costs are and have been incurred in the development and expansion of the rail network from its inception to the current level of service. This leads to an informed process of cost allocations that is based on the drivers of the costs.

#### **2.1.1 Typical railway development process**

The initial phase of a railway development will usually be the construction of a single line railway with a number of passing loops to allow the crossing of trains travelling in opposing directions. The distance between the passing loops in combination with the speed of the trains dictates the capacity of the railway, as the scheduling period between each train must be greater than the time required to traverse the section between the passing loops. The installation of this single line route to create the initial tranche of capacity is the most expensive incremental phase of railway development, as

it is necessary to install rail infrastructure along the full route to provide capacity for even a single train.

Once the single line railway has been installed, as demand for capacity increases, this can initially be achieved relatively cheaply by installing additional passing loops so as to reduce the longest section running time. For example, in theory, the capacity of a 210 km track with 6 passing loops at a distance of 30km could be nearly doubled simply by the installation of an additional 7 passing loops to create 15km intervals. Other mechanisms for reducing the section running times can also be adopted to create more incremental increases in capacity, for example, improvements in track standard to allow faster train running or changes to signalling systems to reduce the delays associated with the crossing of trains.

Eventually, as demand increases, it may become necessary to connect the passing loops to create dual track. During this phase of expansion, the costs of additional capacity will be significantly higher due to the need to install long lengths of additional track between existing loops to create the incremental capacity. However, the incremental capacity created is also large. If this step increase in capacity is not matched immediately with a similar step increase in demand then the incremental cost associated with meeting a smaller increase in demand during this expansion phase can be quite high.

### **2.1.2 Factors that impact on railway maintenance and renewal costs**

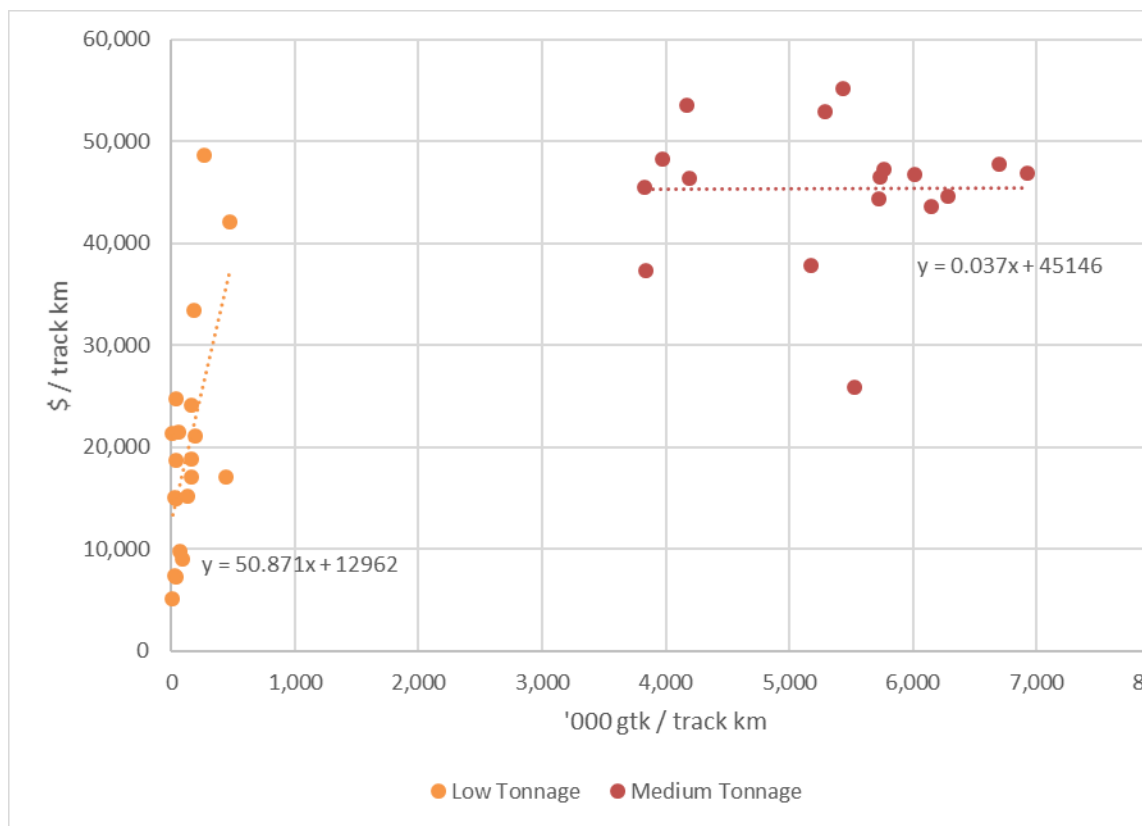
There is a minimum *base cost* of maintaining and renewing the rail network associated with keeping the single line railway operational. This base cost is essentially fixed in nature; it would have to be incurred even if no trains used the line, simply to ensure that the line could be used. As an example, the cost of fire and vegetation management is constant across time and will not vary with tonnages or the number of services. This base cost may vary between different railways due to local factors, in particular local climatic conditions or specific terrain factors can have a significant impact on the base maintenance costs of the railway. Thereafter, maintenance and renewal costs tend to increase with expected and actual usage of the track, based on two related factors:

- *expected usage*, measured in multi-dimensional terms of numbers of trains, required service quality (primarily axle load and train speed) and gross tonnage, determines the standard to which the track needs to be maintained so that it is fit for purpose; and
- *actual usage*, resulting in degradation of the infrastructure that must be remediated, primarily related to the gross tonnage carried on the network.

On this basis, over the longer term, the main determinant of the extent to which the West Moreton maintenance costs exceed the *base cost* of keeping the railway operational, is the gross tonnage operated over the track, which influences both the required standard to which of the track must be maintained, as well as the usage related asset degradation.<sup>2,3,4</sup>

This is evident from an examination of Queensland Rail’s historical costs across its various rail systems as shown in Figure 1.

**Figure 1 Maintenance Cost curves for Queensland Rail’s systems – linear trendline**



From the plot in Figure 1 above, there are two clearly observable clusters of maintenance costs, which represent both low tonnage and medium tonnage systems

<sup>2</sup> Johansson, P., Nilsson, J-E. (2001), An Economic Analysis of Track Maintenance Costs, *Transport Policy*, 07/2004, p.10 & p.13

<sup>3</sup> Andersson, M. (2009), Marginal cost of railway infrastructure wear and tear for freight and passenger trains in Sweden, *European Transport n.48/2011*, p.10

<sup>4</sup> Smith, A.S.J. & Wheat, P. (2006), Assessing the Marginal Infrastructure wear and tear costs for Great Britain’s Railway Network, *Journal of Transport Economic and Policy*, 42(2), p. 189-224

(note, none of Queensland Rail's systems would be classed as high tonnage). The medium tonnage cluster contains the observations from the Mt Isa, NCL North and South and the West Moreton systems. Queensland Rail's remaining systems are in the low tonnage cluster.

The clusters show that there are different drivers of maintenance costs at different tonnage profiles. This is shown by the high coefficients for variation in tonnage in the low tonnage systems, and the large differences in the apparent fixed costs (represented by the intercept term) between the two clusters. While it is apparent that there are some observations in the low tonnage group each group that are outliers (for example, the three observations where maintenance cost is above \$30,000/track km will have been driven by lumpy maintenance profiles due to, for example re-sleepering or bridge painting), it clearly indicates that the medium tonnage systems (including the West Moreton system) typically incur a larger amount of fixed maintenance than the low tonnage systems.

QR's demonstrated historical relationship between tonnage and maintenance costs for its various systems is generally consistent with the literature on this issue,<sup>2,3,4</sup> which often concludes that the relationship assumes a logarithmic trend line, reflecting that an efficient maintenance program should show a decreasing marginal cost as tonnages increase, due to efficiencies of scope and scale.

### **3 Categorisation of costs to reflect cost causation**

The purpose of breaking costs into their fixed and variable components is usually to enable the development of a cost allocation methodology between different services that more closely approximates the drivers of cost causation. However, the division into fixed and variable, without reference to other important factors that differentiate rail network service provision, such as the target quality of standard, is too simplistic a basis for efficient cost allocation and prices.

#### **3.1 Cost categories**

The objective is to allocate appropriate and efficiency enhancing shares of forward looking costs of the West Moreton Network to coal or non-coal services. However, the service requirements of these two groups are very different, and this materially affects the efficient allocation of costs to each class of service. For example:

- non-coal services are forecast to run around 3 return services per week leading to a total gross tonnage across the route of less than 300,000 tpa; whereas
- coal services are forecast to run 62.8 return services per week with a total gross tonnage across the route of greater than 11mtpa.

As such, the general standard to which the infrastructure must be maintained in order to reliably operate the forecast coal services will be quite different to that which would be required if only the non-coal services were in demand.

The categorisation of costs into fixed and variable components is intended to identify the costs that vary with tonnage, as compared to those costs that are fixed for a given standard to which the track must be maintained. However, a simple categorisation of costs as fixed or variable across the West Moreton Network as a whole does not reveal whether the measured fixed costs would necessarily be incurred if the system were required only to provide non-coal services. Rather, the level of fixed costs for track designed solely to carry non-coal services would be materially different from the level of fixed costs for track designed to carry both types of services. This is demonstrated by the results of the analysis of Queensland Rail's historic cost data, shown in Section 2.

Hence, a significant proportion of Queensland Rail's fixed costs are attributable to the need to maintain an infrastructure standard suitable for the current coal operations which are in excess of 6mtpa, rather than the need to maintain an operational rail system that would permit the operation of a handful of non-coal services each week.



Therefore, the separation of costs into their fixed and variable components using the approach proposed by the QCA does not represent an efficient allocation of costs and will not result in efficient prices. Specifically, the prices levied on non-coal services will be higher than efficient levels because they would include the costs of a higher standard of rail infrastructure than they need. That would have the effect of deterring non-coal services. In contrast, the prices for coal services would be lower than is efficient because revenue from non-coal services would contribute to the maintenance of the standard that only the coal service customers require. In Synergies view, a more sophisticated approach to cost allocation is required, one that fully reflects the different maintenance and renewal works needed to support different types of demand, to ensure that prices for different categories of service are efficient.

Given the differences in infrastructure standard required for coal and non-coal services, Synergies considers that an efficient cost allocation approach would be better supported by categorisation of costs into common costs, coal fixed costs and variable costs.

### **3.1.1 Common costs**

Common costs are costs that are not attributable to a single user of the system. They would be incurred regardless of the diversity of services and volume of services provided by the network. These costs are fixed in nature and so do not change with usage. By nature these costs do not increase as the number of different customer types (or “products”) increase.<sup>5</sup>

These costs may alternately be referred to as shared costs<sup>6</sup> or ‘joint and common’ costs. Shared costs as denoted by Kahn are costs to a firm that are incurred when producing something that produces two products in equal proportions. An example of the concept is the cost of a farmer planting wheat, for both grain and straw; the costs must be shared as the process yields both products.<sup>7</sup>

The same issue arises in relation to Queensland Rail’s West Moreton Network, whereby some minimum level of shared or joint and common costs is incurred in maintaining the network so that it can provide both coal and non-coal services. It is important to note, though, that if the rail provider only incurred these shared costs, the

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<sup>5</sup> Jamison, Mark A. 1999. *Industry Structure and Pricing: The New Rivalry in Infrastructure*. Boston: Kluwer Academic Publishers. Pp. 19, 21-22

<sup>6</sup> Kahn, Alfred. 1988. *The Economics of Regulation: Principles and Institutions*. Cambridge: The MIT Press (Reissue Edition) Pp.79

<sup>7</sup> Marshall, Alfred. 1953. *Principles of Economics: An Introductory Volume* 8th Edition. New York: The Macmillan Company. Pp. 388-390

standard of the network would only be sufficient to allow for the provision of a limited number of services, consistent with the requirement for non-coal services. However, these costs are shared in the sense that they would also be incurred if network only had to provide coal services, although further fixed costs would also be incurred.

For a mixed use network, there is no simple allocation rule based on gtk or train paths alone, that would result in the efficient allocation of these shared costs to each of the services.<sup>8</sup> These common costs contribute to multiple services, cannot be split, and cannot be efficiently allocated based on a simple quantity rule.<sup>9</sup>

### 3.1.2 Coal fixed costs

In the circumstance where the same assets are used to provide different services, it is sometime possible to identify *service incremental costs*.<sup>10</sup> This represents the increase in fixed costs above the level of the common costs set out above to allow for the provision of a differentiated service.

In the instant case, the requirement to provide coal services in addition to non-coal services requires additional fixed costs so that the network can operate at the higher standard. The additional fixed costs do not then vary with the volume of coal haulage, so cannot be described as variable costs. And the additional fixed costs alone would not be sufficient to maintain the network so that it could carry the forecast volume of coal. This is the situation that applies on the West Moreton Network.

Whilst over the long-run, the fixed service incremental costs for coal services may all be classified as variable, over the typical period being analysed, many of these costs will not vary with the tonnage profile, and should therefore be classified as fixed. As such, there ends up being a “lumpy” cost profile as more tonnages are added to the system, when an additional tranche of tonnage triggers the next step of costs, which then moves to being a fixed cost.<sup>11</sup>

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<sup>8</sup> In contrast, in the case of wheat and straw example, the farmer does not need to allocate costs in the manner of a regulator because markets determine the prices of the two products. The only question for the farmer is whether revenue from both products is sufficient to cover the total shared costs. Even so, there are circumstances where it is necessary to allocate shared costs to each of the products. The most obvious example is in determining the resource rent tax from a joint product resources such as an oil and gas operation. To do this, the taxing agent needs to know the profitability of each joint product and hence the cost of each product. One cannot determine what the efficient or tax maximising allocation of costs is to each product without reference to demand characteristics (specifically, the prices elasticity of demand) of each product.

<sup>9</sup> Sharkey, William W. 1982. *The Theory of Natural Monopoly*. Cambridge: Cambridge University Press. Pp. 38.

<sup>10</sup> Jamison, Mark A. 1988. “*Applying Part X Allocations to Intrastate Costs*.” Presented at the Fourteenth Annual Missouri Rate Symposium, Kansas City, MO

<sup>11</sup> Under a long run marginal pricing approach (LRMC), these lumpy fixed costs are effectively converted into a \$/gtk of demand which can then be treated as a variable cost from a cost allocation perspective. Since medium to long-run service incremental costs are driven by medium to long-term demand growth, this might be considered to be a

As has been flagged by Queensland Rail, these fixed costs are triggered by the need for the network to be able to operate coal services, with a tonnage profile of greater than 6mtpa. As these cost are not caused by the running of non-coal services, and would not be incurred in the absence of coal services, there needs to be a direct allocation of these fixed costs to coal customers and as such this becomes *service specific fixed costs*<sup>12</sup>.

### **3.1.3 Variable costs**

All costs that vary directly with tonnage (and hence which do not fit in to these first two categories), will correctly be classified as variable costs. Typically, variable costs will be costs that respond to small changes in the tonnage profile within the cost forecasting period. As these variable cost make up part of the service incremental costs mention in the fixed costs analysis, these costs need to be considered together. These costs are the variable costs that are incurred after there has been a step-up in fixed costs.

## **3.2 Application to West Moreton Network**

Queensland Rail has undertaken an analysis of its forecast maintenance and asset renewal capex costs for the proposed regulatory period in order to develop an indicative assessment of the costs that fall into each of these three categories. Queensland Rail has not prepared a separate analysis of operating costs, as we understand it has accepted the QCA's recommended categorisation of fixed and variable costs, and that all of the fixed operating costs are, in fact, common costs.

The resulting indicative categorisation of Queensland Rail's forward looking costs into common, fixed coal and variable costs is set out in Queensland Rail's paper on West Moreton Network - Common, Fixed and Variable Maintenance and Renewal Costs, and is summarised in the tables overpage.

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reasonable form of pricing, however it results in prices that are inefficient in the short term by overstating the short term incremental costs of access, and therefore deter the use of excess capacity in the short term.

<sup>12</sup> Baumol, William J. 1986. Superfairness. Cambridge: The MIT Press. Pp. 116

**Table 1 Queensland Rail Forecast Maintenance Costs by category (\$,000)**

<b>Cost Group</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>Average</b>
Common Cost	\$24,554	\$10,477	\$16,507	\$10,684	\$11,329	\$14,710
Coal Fixed	\$8,942	\$4,491	\$4,533	\$4,082	\$5,761	\$5,562
Variable	\$6,027	\$5,740	\$5,300	\$4,940	\$4,880	\$5,377
<b>Total</b>	<b>\$39,523</b>	<b>\$20,708</b>	<b>\$26,340</b>	<b>\$19,706</b>	<b>\$21,970</b>	<b>\$25,649</b>

**Table 2 Queensland Rail Forecast Capex Costs by category (\$,000)**

<b>Cost Group</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>Average</b>
Common Capex	\$8,028	\$6,330	\$8,979	\$7,426	\$6,789	\$7,510
Coal Fixed Capex	\$17,013	\$21,198	\$18,174	\$14,976	\$13,388	\$16,950
Variable Capex	-	-	-	-	-	-
<b>Total</b>	<b>\$25,041</b>	<b>\$27,528</b>	<b>\$27,153</b>	<b>\$22,402</b>	<b>\$20,177</b>	<b>\$24,460</b>

Splitting the forward looking costs into these three cost categories supports a robust cost allocation methodology that, as far as possible, establishes a direct link between the costs being incurred and their allocation to relevant user. For this reason, it supports more efficient prices than the alternative proposed by the QCA.

## **4 Allocation Methodology**

### **4.1 Variable costs**

Variable costs should be allocated according to the most relevant variable cost driver. As discussed above, the main factor that influences variable maintenance costs is gross tonnage/km, so allocating variable costs to coal and non-coal services on the basis of forecast gtk will reflect the most efficient approach.

Operating costs include the costs associated with train operations and control, business management and corporate overheads. The variable component of these costs are therefore subject to a more mixed range of cost drivers, including both gtk and train numbers. It would be reasonable to allocate variable operating costs on the basis of one or a combination of these cost drivers.

We note that Queensland Rail has not identified any variable capex costs, and so have not considered the most appropriate cost driver for this cost category.

The QCA has recommended allocating variable maintenance and operating costs based on gtk. While some costs are driven by factors other than gtk, Synergies agrees that gtk will be the most significant of these cost drivers and that, as such, this is a reasonable approach.

### **4.2 Coal fixed costs**

Coal fixed costs form part of the service incremental cost relating to the operation of coal services, and should be allocated in full to coal users. This applies to both coal fixed maintenance and coal fixed capex costs, noting that Queensland Rail has not identified any coal fixed operating costs.

### **4.3 Common costs**

#### **4.3.1 Relationship between cost allocation and efficient prices**

As described above, railway infrastructure exhibits a declining cost structure (both in the investment required to create capacity, and in the ongoing costs associated with maintaining and renewing that capacity). That is, it tends to exhibit scale economies with average costs declining with volume. There are also scope economies across services that derive from the existence of significant shared or joint and common costs across the services. This again applies to both investment in capacity and maintenance of that capacity.

Economic theory provides that prices based on short-run marginal costs result in the most efficient use of resources.<sup>13</sup> However, it is well recognised that in industries with fixed costs, prices based on short run marginal cost will not be sufficient for the owner to fully recover the fixed costs associated with providing the service.

Infrastructure businesses have large fixed and sunk costs. They need to set prices above marginal costs in order to recover these costs. From a social efficiency perspective, they should do so in a manner that least distorts production and consumption decisions by their customers, and which thereby least distorts future demand. Because future demand for different services is affected differently by prices, this means that the best outcome from a societal perspective will arise if prices that recover these fixed costs discriminate between users on the basis of their price sensitivity, without triggering bypass and duplication of the network, and while ensuring the network has sufficient revenue to operate for as long as its services are in demand.

This has led to the application of the constrained market pricing methodology that underpins Queensland Rail's pricing principles, which is consistently applied across Australian railways. This provides that Queensland Rail may set different prices for different services on its railway in order to maximise the the commercially viable use of capacity while meeting, in aggregate, the costs of providing the service, provided that prices remain within the following outer limits:

- prices should not exceed the costs of providing access to a user or group of users on a stand-alone basis; and,
- prices should not fall below the incremental costs of providing access to a user or group of users.

These pricing principles are explicitly designed to ensure that the application of price differentiation does not lead to any cross subsidy between users or groups of users. The concept of cross-subsidy is well established in economic literature:<sup>14</sup>

If the revenues of a regulated enterprise just cover total economic costs, then all prices are subsidy-free if the revenues of each service and each group of services is at least as great as the incremental cost of that service or group of services; equivalently, prices are also subsidy-free if the revenues of each service and each group of services is no greater than the stand-alone cost of that service or group of

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<sup>13</sup> This applies provided that it does not then result in capacity shortages. If a scarcity price is included in the definition of short-run marginal cost, then even this limitation does not apply.

<sup>14</sup> Faulhaber, G. (2002). Cross-subsidy analysis with more than two services, University of Pennsylvania, August, <http://assets.wharton.upenn.edu/~faulhabe/cross%20subsidy%20analysis.pdf>

services. I show in the paper that under the assumption that revenues equal economic cost, these two tests for cross-subsidy are equivalent.

Critically, this pricing framework allows the infrastructure provider to recover common costs from users according to their capacity to contribute to those costs. This recognises that a requirement for all users to contribute to these costs on a pre-determined or formulaic basis may simply mean that some users will choose not to use the service at all – and that it is better for the remaining users if this user continues to use the service paying a lower contribution to common costs, than to not use the service at all.

Since the constrained market pricing methodology establishes limits that are fundamentally cost based, it requires that costs are accurately defined and allocated through the cost allocation methodology, according to the principles set out in earlier sections. That is, given that the outcome of the QCA's cost allocation recommendations directly establishes the maximum price that Queensland Rail can charge for the predominant users of the West Moreton Network, in order for the resulting prices to reflect efficient prices, the approach used for cost allocation in this circumstance needs to mirror the established and accepted principles for efficient pricing.

#### **4.3.2 QCA Recommended approach**

We note that the QCA only categorised costs as fixed and variable and, as a result, did not deal with the allocation of common costs as distinct from service specific fixed costs. However, as the QCA's fixed cost category is largely made up of common costs, we have assumed that the QCA's recommendation regarding the allocation of fixed costs would apply in relation to the common cost category.

The QCA has recommended that forward looking fixed costs, including maintenance, operating and asset renewal capex costs, be allocated to coal services in order to reflect the proportion of maximum available capacity that is available to be contracted by coal services.

In this regard, Synergies understands that the West Moreton Network has an effective maximum operational capacity of 112 return paths per week in its current configuration. There is currently significant spare capacity on the West Moreton Network, with Queensland Rail currently forecasting 65.8 return train services per week, all but 3 of which are coal services.

However, we note the QCA's view that, even if demand for coal services were to significantly increase, Queensland Rail is currently unable to contract the full amount of the West Moreton Network capacity to coal services due to Government-imposed constraints (although coal services can and do use the remaining paths for the

operation of *ad hoc* or uncontracted services). In its Draft Decision, the QCA concluded that these Government constraints limit the amount of paths that are able to be contracted to coal to 77 return paths per week. As a result, the QCA has recommended that coal be allocated 68.8% of fixed forward looking costs, based on coal only being able to contract 77 out of a maximum 112, or 68.8% of the, train paths.<sup>15</sup>

The QCA's rationale for this recommendation is that it is necessary to avoid the costs associated with providing access to non-coal services being recovered from coal traffic that cannot access this capacity.<sup>16</sup>

Generally, regulators support allocating all of a regulated business's efficient costs to determine ceiling prices, as this provides the business with a reasonable opportunity to recover the efficient costs of investing in and operating the service to provide access. But coal train services should not be required to pay for services that they are not able to contract to use.

Further, the QCA considers that whether or not the Queensland Rail recovers the non-coal share of maintenance cost from non-coal services is not relevant for setting reference tariffs for coal-carrying train services on the West Moreton Network.<sup>17</sup>

### **4.3.3 Consistency of QCA allocation approach with efficient pricing**

Synergies does not consider that the QCA's recommended allocation approach is consistent with the objective of the QCA Act, to promote the economically efficient operation of, use of and investment in, significant infrastructure by which services are provided, with the effect of promoting effective competition in upstream and downstream markets. Nor is it consistent with the QCA Act pricing principles which provide, in part, that the price should:

- (a) generate expected revenue for the service that is at least enough to meet the efficient costs of providing access to the service and include a return on investment commensurate with the regulatory and commercial risks involved; and
- (b) allow for multi-part pricing and price discrimination when it aids efficiency; ...

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<sup>15</sup> Synergies notes that Queensland Rail has, in its response to the QCA's 2015 Draft Decision, submitted that the Shareholding Ministers preference for a limit of 87 return coal paths per week through the Metropolitan Network is not legally binding, and therefore is not recognised by Queensland Rail as a constraint. This matter is not dealt with in this paper.

<sup>16</sup> QCA (October 2014), Draft Decision on Queensland Rail's 2015 Draft Access Undertaking, p143

<sup>17</sup> Ibid p156.



The reasons for this view are set out below.

*Nature of the relevant cost drivers*

The QCA has justified its approach to the allocation of fixed (i.e. common) costs as necessary so that coal users are not required to pay for services that they are not able to contract to use.

This implies that there is a causal relationship between common costs and the level of installed capacity or, put in the alternate, that there are discreet and identifiable fixed costs associated with the capacity that cannot be used for coal services. This is not the case. The costs that must be incurred to provide for a train regularly operating on the route and bears little, if any, relationship to the installed path capacity of that route. Any change to the installed capacity, either through the addition or removal of passing loops, would have a minimal impact on these common costs. In essence, the full amount of the common cost are incurred by the operation of a single regular train service on the network, whether that be a coal or a non-coal service.

It is certainly legitimate, and indeed necessary, for a regulator to ensure that one user or group of users does not cross subsidise another user or group of users. However, as established above, the rules for assessing cross subsidy are that no user (or group of users) pays less than their incremental cost, and no user (or group of users) pays more than their stand alone cost. Given these common costs are those required to keep the route operational for the operation of any regular service, they would be an essential part of the costs of providing access to coal services on a stand alone basis. Provided that no more than coal's stand alone cost is allocated to them, then a cross subsidy will not occur.

It is acknowledged that the QCA based its approach on the assumption that the Queensland Government had imposed a policy rule that only a proportion of total capacity could be used for coal services. However, the imposition of any such rule, or changes in the parameters of any such rule to allow less or more coal carriage, makes no difference to the quantity of common costs that will be incurred. In this regard, we have been advised that Queensland Rail considers that the Shareholding Minister's preference to limit coal services in the Metropolitan Network to 87 paths is not legally binding and will not be observed by Queensland Rail – however this will not cause any change in the common costs that will be incurred.

There is therefore no *a priori* reason for believing that allocating these costs on the basis of any such policy rule will result in outcomes that satisfy the objectives of the QCA Act. By way of example, if allocating 100% of the costs to coal and 0% to non-coal had no effect on demand for coal services, but increased non-coal services by 1 train path

per week, there would be an unambiguous improvement in efficiency and the resultant prices would remain consistent with the constrained market pricing methodology.

*QCA recommendation prevents recovery of efficient costs from access seekers*

The QCA has recommended the allocation of forward looking common costs to coal and non-coal services on the basis of the capacity that could potentially be used by each type of service. However, given the expected usage of the infrastructure, which the QCA has accepted, this will mean that Queensland Rail has no a realistic opportunity to fully recover the QCA's accepted efficient forward looking costs of providing the service.

There is clearly a difference between the amount of capacity potentially available on a route and the demand on that route. An excess of capacity over demand is particularly common when capacity is first installed, or when tranches of capacity are added, because additions tend to be large and lumpy in comparison to year on year changes in demand. This is an issue faced by all railways as capacity is installed in tranches, and demand may trigger the next 'tranche' of capacity, but may be significantly less than the total capacity created by that tranche. Furthermore, rail infrastructure is a long lived asset and demand may vary within its life. In the case of the West Moreton Network, while it was capacity constrained at the time of the 2010 amendments to the 2008 AU, current demand from both coal and non-coal users now is well below the capacity that is available for those services.

The QCA's current methodology retains many of the problems that Queensland Rail identified with the cost allocation methodology in its previous 2014 Draft Decision which recommended costs be allocated based on forecast usage as a proportion of available capacity. This clearly prevented Queensland Rail from recovering its assessed efficient costs because it allocated a portion of forward looking costs to unused paths. This Draft Decision essentially continues this approach.

The QCA has concluded that coal can use a maximum of 77 train paths from the total 112 paths the network can supply, and that this should mean that coal, in total, should only bear 68.8% of the fixed and common costs. The QCA then allows the full amount of this 68.8% to be recovered from forecast coal traffic. 62.8 weekly coal services are forecast, which means that each service bears  $62.8/77$  of the costs. This amounts to each forecast coal service bearing 1.2 times the costs allocated to each of the 77 paths available for coal.

When this same cost recovery analysis is applied to non-coal customers, it results in an unachievably high allocation of future common costs to actual non-coal users. The QCA has allocated future costs based on 35 maximum non-coal paths out of 112

maximum total paths (or 31.2%). Given there is only current demand for 3 non-coal services per week, for Queensland Rail to generate enough revenue from access seekers to recover these costs, it would need to charge each actual non-coal service the future costs related to 11.7 'available' paths in order to recover 31.2% of its common costs.

This reflects a major departure from the approach that has previously been adopted by the QCA and which has formed the basis of Queensland Rail's proposals. As stated by the QCA previously:

Put another way, it is not necessary for the non-coal traffics to pay the same tariffs as coal traffics. It is only necessary that the tariffs charged to the coal services not subsidise the non-coal services. So, if QR Network charges the other traffics lower tariffs, the Authority is entitled to treat those traffics as though they pay the same tariff as coal, when assessing whether QR Network is receiving sufficient revenue. Any shortfall in non-coal revenue is a commercial matter for QR Network, which may be addressed by the TSC subsidies from the state government.

The effect of the QCA's recommendation is now to require that the remaining non-coal services not just be assumed as paying the same access charge as coal services, but in fact an access charge that includes ten times the contribution to common costs as coal services. For such an allocation rule to be efficient and consistent with the Act, non-coal services would have to be dramatically less sensitive to price than coal services. This is not the case.

As a result, there is no reasonable prospect that Queensland Rail will be able to recover the required proportion of forward looking costs from the users of non-coal services. The QCA has dismissed this as a commercial issue for Queensland Rail to manage, however, it is unclear what strategies the QCA envisages that Queensland Rail may apply, given that coal services reflect 98% of the forecast usage of the West Moreton Network.

As highlighted in the quote above, the QCA may consider that, to the extent that non-coal services' share of forward looking costs cannot be recovered from the users of those services, this should be addressed through the Transport Services Contract. However, as the QCA has concluded following its detailed analysis of industry assistance provided by the Queensland Government, to the extent that Queensland Rail's access charges are lower than necessary in order to induce demand, and this results in a higher requirement for Government industry assistance, this increased Government expenditure is unlikely to have a positive effect on social welfare:<sup>18</sup>

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<sup>18</sup> Queensland Competition Authority (July 2015); Industry Assistance in Queensland; p iv

A significant portion of industry assistance in Queensland is directed towards supporting certain businesses or sectors over others, rather than towards correcting market failures. In a number of cases, the primary objective is to directly increase the profitability of private sector businesses. This assistance is unlikely to lead to a higher level of economic activity than would otherwise occur. Much is captured by private firms with limited or no positive effect on the welfare of Queenslanders as a whole.

As a result, Synergies does not consider that a pricing framework that requires Queensland Rail to seek additional industry assistance from the Queensland Government is either efficient or consistent with the public interest, particularly when there are likely to be markedly superior cost allocations that do not require an increased level of industry assistance without adverse impacts on usage.

*QCA recommendation prevents any incentive for the efficient maintenance and renewal of the assets*

The extent of maintenance and renewal works that Queensland Rail undertakes on the West Moreton Network strongly impacts the reliability and standard of service that can be offered to coal users.

In the past, the West Moreton Network was very much a mixed use system. However, changes in usage patterns mean that coal services are now undisputedly the core traffic. As such, Queensland Rail's commercial outcomes for the West Moreton Network rest almost entirely on the continued operation of these coal services, and Queensland Rail has a strong commercial imperative to establish maintenance and asset renewal plans to support the ongoing operation of these services in the long-term. However, the QCA's recommended approaches will undermine this incentive; it will create a strong disincentive for Queensland Rail in relation to the efficient maintenance and renewal of its network, because it does not allow Queensland Rail a reasonable prospect of fully recovering its future efficient costs from the users of the network.

Queensland Rail cannot continue to provide access to coal users without incurring these common costs, those base costs that must be incurred in keeping the network operational for even a single regular service. However, the requirement to allocate common costs on the basis of available capacity rather than expected usage will render Queensland Rail unable to create a business case that shows that it can reasonably anticipate the full recovery of its forecast efficient costs.

As will be the case for any commercial business, Queensland Rail will have a strong incentive to reduce costs to the level that can be supported by its revenue. This induces the risk of a downward spiral where, over the medium term, the quality of the

infrastructure will deteriorate. While it is likely that the QCA and coal users will try to hold Queensland Rail accountable for this on the basis of it spending less than forecast in the maintenance and renewal of the network, this is outcome is entirely foreseeable on the basis that the QCA has not established a framework that allows Queensland Rail to recover its future efficient costs of providing the service from the users of the service.

*Allocation methodology creates incentive to reduce system capacity*

The allocation methodology also gives Queensland Rail incentives to reduce the capacity of the West Moreton Network. As noted above, as the QCA has recommended that the proportion of maintenance costs that are able to be recovered from coal customers be capped at the contracting cap set by the Queensland Government; this means that the balance must be recovered from a disproportionately small customer group that has a relatively low ability to pay, and ultimately means that there is no chance to recover the efficient costs required to maintain the network.

This presents an incentive to Queensland Rail to reduce the capacity on the network so that there is no longer the same extent of surplus capacity above the Government contracting cap. While this would have minimal, if any, impact on the forward looking common costs, by decreasing the total available capacity, it would increase the proportion of this available capacity that can be contracted to coal. This would enable Queensland Rail to recover a greater proportion of these costs from coal users.

#### **4.3.4 Conclusions**

Synergies considers that there is no robust economic justification for the QCA requiring that common costs be allocated between coal and non-coal users on the basis of their potential share of maximum installed capacity. Rather, the QCA's view appears to be based more on a concept of fairness rather than on economic principles, as indicated by its comments in relation to Queensland Rail's proposed allocation of operating costs:<sup>19</sup>

Our view is that coal services would then have paid more than their fair share of operating costs.

However, as explained above, this approach will have significant negative consequences on efficient incentives for the operation of, use of and investment in the

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<sup>19</sup> Ibid, p158

rail network, to the extent that Synergies considers that the cost allocation rule is inconsistent with achieving the objectives of the Act. In particular:

- it does not recognise the nature of cost drivers in an industry that exhibits a decreasing marginal cost such as rail infrastructure, as it effectively treats common future costs as if, in the long term, they are fully variable according to installed paths;
- recognising that this cost allocation approach is directly used to set prices, it does not reflect the principles of economic theory in relation to setting efficient prices in a declining cost business, and the requirements that must be met to ensure cross subsidies do not occur;
- given only 3 of the allocated 35 non-coal paths are used by non-coal services, with the remaining paths unused, this effectively allows Queensland Rail no prospect of recovering the QCA's assessed efficient common costs of providing the infrastructure from the users of the service;
- it prevents efficient signals being given to Queensland Rail in relation to the future maintenance and renewal of the infrastructure that is essential for the ongoing provision of coal services, as it will not have a business case that anticipates full recovery of these future costs; and
- it does not comply with the QCA Act's pricing principles which entitle Queensland Rail to "generate expected revenue for the service that is at least enough to meet the efficient costs of providing access to the service"

While the QCA is required under the Act to consider the legitimate interests of users, this does not warrant a departure from the legislated pricing principles under the Act.

## **Attachment 3: Everything Infrastructure – A Review of Queensland Rail’s Analysis of Approaches to Common, Fixed and Variable Costs**

Queensland Rail

# Review of Queensland Rail's Analysis of Approaches to Common, Fixed and Variable Costs

10 March 2016



EVERYTHING INFRASTRUCTURE GROUP



## DOCUMENT CONTROL

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# 1. QUEENSLAND RAIL REQUIREMENTS

## 1.1. OBJECTIVE

Everything Infrastructure Group (EIG), as sub-consultants, were appointed by Queensland Rail to conduct an independent engineering review into the appropriateness of the Queensland Competition Authority's (QCA) costing allocation methodology for the West Moreton Network for the Draft Access Undertaking (2015 DAU).

The objective of the review was to provide an independent assessment on the appropriateness of the QCA's concept for the categorisation of fixed and variable coal and non-coal costs, and associated cost allocation methodology, giving due consideration to the unique geophysical and design elements of the West Moreton Network.

## 1.2. BACKGROUND AND HISTORY

The West Moreton Network was initially designed to cater for non-coal traffic, with the section of the track from Rosewood to Grandchester being the first railway constructed in Queensland in 1865, the railway reaching Toowoomba in 1867 and Roma in 1880.

The West Moreton Network (refer Figure 1) is characterised by the maintenance intensive Toowoomba range section, originally constructed in the 1880's with a grade of 2% and some 40 sharp curves. In addition, the majority of the railway from Rosewood to Columboola is founded on expansive clays, known normally as "black soils". John Keer in his book "Triumph of Narrow Gauge" sums it up in these words:

"Building a railway over the notorious black soil of the western downs presented problems. In wet weather black soil absorbs water and becomes like glue. Even today, drivers of rubber tyred vehicles find it nearly as treacherous as did the early teamsters."

The result of this history and geographical challenges is that, despite continuing critical investment over the last century upgrading rail weights, sleepers, and the like, fundamentally much of the West Moreton Network formation is sub-standard with a constructed alignment of a lower standard<sup>1</sup> than that which would be constructed for a new stand-alone Main Line Freight<sup>1</sup> haul railway built specifically for coal carrying services. As a consequence of this the track requires a higher cost maintenance regime in order to safely and reliably deliver a level of tonnages characteristic of even a branch line freight task<sup>2</sup>. Yet currently the system carries 6.65M tonnes per year with an axle load of 15.75 tonnes and an average per train payload of 1925 tonnes.

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<sup>1</sup> TTCI Evaluation of Queensland Rail West Moreton Coal Corridor P-10-042", 2010, Transportation Technology Center Inc – a subsidiary of AAR, USA, David Read

<sup>2</sup> As defined in AS 7630 Track Classification

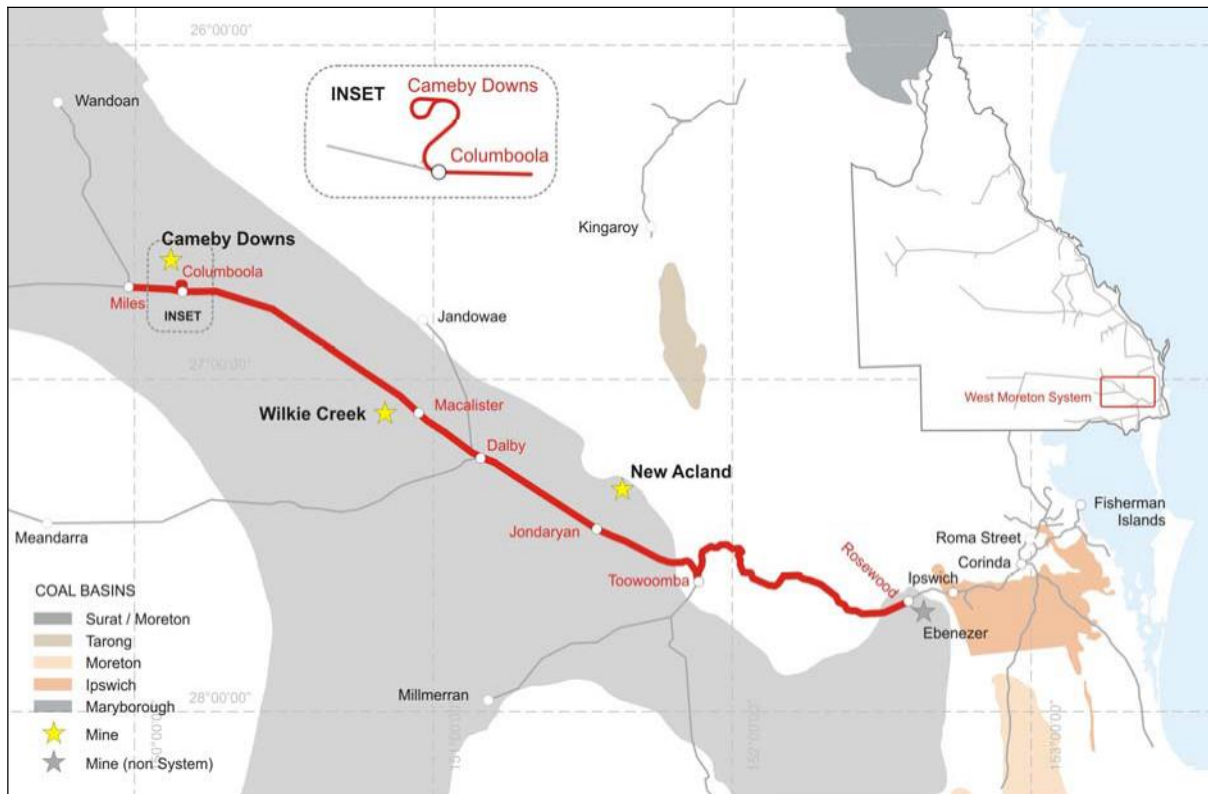


Figure 1 Diagram West Moreton Network

### 1.3. CONTEXT

In May 2015 Queensland Rail submitted a Draft Access Undertaking (2015 DAU) to the Queensland Competition Authority (QCA) in response to an initial undertaking notice from the QCA. The 2015 DAU included a ceiling price and coal reference tariff for coal carrying services travelling on the 314km West Moreton Network.

Queensland Rail's 2015 DAU proposed ceiling price for the West Moreton Network coal reference Tariff was based on a mix of allocators including:

- coal's share of forecast train paths (forecast Capex); and
- coal's share of forecast GTK (forecast maintenance and operating costs)

In response, the QCA in its 2015 Draft Decision adopted an alternative approach to the allocation of Queensland Rail's proposed maintenance forecast costs and introduced a new allocation methodology based on disaggregating forecast costs into fixed costs and variable costs where:

- The **fixed costs** are to be allocated based on the relative proportion of the network capacity available to coal services to contract—that is, based on coal services' maximum proportion of total available paths;<sup>3</sup>

<sup>3</sup> Queensland Competition Authority, 'Draft Decision Queensland Rail's 2015 Draft Access Undertaking October 2015' (p145).

- **Variable costs** are to be allocated based on the relative volume forecast for all train services, as variable costs are directly affected by volumes.<sup>4</sup>

The QCA also proposed that fixed and variable costs for the common network be differentiated according to:

- fixed common network costs - those costs that do not vary with usage; and
- variable common network costs - those costs that vary with usage<sup>5</sup>.

Queensland Rail has not accepted the QCA's proposed methodology, considering it flawed. Queensland Rail retains its approach in the 2015 DAU which is based upon the QCA's methodology for the current reference tariff and the QCA's 2014 Draft Decision on Queensland Rail's 2013 draft access undertaking (2013 DAU).

However, Queensland Rail has separately reviewed the methodology in the QCA's draft decision on the 2015 DAU, including the commissioning of Synergies Economic Consulting to undertake an economic analysis of the effectiveness of the QCA's recommended approach of cost allocation.

Queensland Rail believes that the QCA's proposed methodology does not align costs with the nature of the underlying factors which cause them to be incurred (that is, the cost 'drivers'). While retaining its 2015 DAU approach to cost allocators, Queensland Rail states that if the QCA is to retain its draft decision cost allocations, under such an approach the parties responsible for certain costs should compensate Queensland Rail for the costs involved ('impactor pays' principle). Queensland Rail summates that the QCA methodology does not achieve this. Queensland Rail believes that under the QCA's methodology the categorisation limitations of only "fixed" and "variable" costs is deficient and that a more sophisticated approach is warranted that more correctly reflects cost drivers on a mixed use network. Queensland Rail considers that if the QCA is to retain its approach in the draft Decision, the following three critical cost categories have to be included:

- **Fixed costs common to the network.** These costs would be incurred even if only a minimal number of services (passenger and non-coal freight) were to utilise the network and do not change with tonnage or time.
- **Fixed costs to operate coal services.** These costs are triggered by the need for the network to operate coal services with the tonnage hauled across the network currently exceeding 6mpta; and
- **Variable costs.** Costs that vary directly with gross tonne kilometres (gtk)

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<sup>4</sup> Queensland Competition Authority, 'Draft Decision Queensland Rail's 2015 Draft Access Undertaking October 2015' (p145).

<sup>5</sup> Queensland Competition Authority, 'Draft Decision Queensland Rail's 2015 Draft Access Undertaking October 2015' (p145).

In consideration of the mixed traffic use on the West Moreton Network, it would appear that the QCA treatment is over simplified and as such will not allow Queensland Rail to recover its efficient costs of providing the service. Queensland Rail asserts that its 2015 DAU approach results in the user of the service paying for the costs of the service they use.

#### 1.4. EIG BRIEF

In the light of the above in December 2015 EIG were engaged by Queensland Rail to provide advice on the effectiveness of the QCA's Draft decision cost allocation methodology, having regard to, and peer reviewing, Queensland Rail's analysis of the conceptual forecast cost allocation methodology and the categorisation of forecast costs from an engineering perspective.

EIG's brief was to analyse the QCA draft decision in the context of Queensland Rail's response by:

1. undertaking a benchmark review of Queensland Rail's forecast scope and cost of maintenance<sup>6</sup>, disaggregated by element of activity, for the next five years, which has been developed assuming:
  - Queensland Rail providing access to all forecast services on the West Moreton system;
  - Queensland Rail providing access only to the forecast non-coal services (3 services per week) on a 'stand alone' basis; and
  - Queensland Rail providing access to the forecast coal services (average 62.8 services per week, 6.1mtpa of coal) on a 'stand alone' basis.
2. Provide advice on the appropriateness of Queensland Rail's proposed disaggregation of forecast maintenance and capex over the next five years into fixed common, fixed coal and variable costs.

EIG has significant experience in relation to rail infrastructure and in particular in relation to access agreements and charges, including having previously provided advice and assessment to QCA in relation to capex and maintenance costs associated with the following Queensland systems:

- Queensland Rail Network Western System Asset Valuation (2009)
- Queensland Rail Network Capital expenditure program for all four coal freight rail systems in Queensland (2009)
- Central Qld coal rail system - the three central coal rail systems (2011)
- Western System coal line from Miles to the Port of Brisbane (2011).

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<sup>6</sup> Note EIG scope did not involve a review of the prudence of the given scope and total cost of the works

## 2. EIG REVIEW METHODOLOGY

### 2.1. OVERVIEW

EIG's review methodology was primarily a two-stage approach as described below and that was developed in consultation with Queensland Rail. Review, assessment and analysis was undertaken, and opinion provided by appropriate professional personnel with relevant experience and skills and including:

**Clara Tether (EIG)** – Clara has over 20 years' plus engineering in the transportation industry mainly in railway infrastructure maintenance. Extensive experience in transport asset condition assessment, rating and design and recommendation of rehabilitation programs, specifically in rail infrastructure.

**John McLuckie (EIG)** – John has over 40 years' experience across a wide range of industries. He has undertaken key leadership roles on large and complex projects including design, construction, maintenance and operation of: rail infrastructure and systems; passenger and freight rolling stock; factories and maintenance workshops. John's senior roles and extensive experience provided the relevant skills to undertake the review of the analysis and work undertaken.

CV's for these personnel can be provided if requested.

The stages are summarised as follows:

**Stage 1** involved a high level review in terms of the potential risks and opportunities presented by the application of the QCA's draft decision. A desktop assessment of the prudence of Queensland Rail's recommendations in relation to disaggregating costs and allocations of costs in relation to the draft decision methodology.

The stage 1 review focussed on Queensland Rail's findings in relation to the cost allocation methodology including considering any engineering requirements under the regulatory framework, nature of the cost items to be included in each category and the appropriateness of proposed cost drivers. Further, the methodology was reviewed in the context of other relevant regulatory frameworks used in other engineering infrastructure systems.

**Stage 2** assessed specifically the technical reasonableness of the Queensland Rail findings including forecast costs and their disaggregation into Queensland Rail's proposed categories. In this stage the rationale for, and prudence of, the allocation of each element within the common, fixed and variable cost categories was assessed. This assessment was primarily based upon:

- Professional technical and economic opinion based upon similar industry experience both in railway engineering and in the economic regulatory frameworks applied to railways and other sectors and jurisdictions;
- Historical data provided by Queensland Rail and engineering discussions with relevant Queensland Rail personnel;

- Use of previous technical assessments and studies undertaken in relation to the conditions and technical considerations unique to the West Moreton Network.

Stage 2 also considered whether the existing data provides a robust case to support the implementation of this new cost-allocation methodology.

## 2.2. BASIS OF REVIEW

In extrapolating and assessing the relevant information from the reference sources provided, EIG has applied reasonable endeavours, in the time frame available, to ensure the accuracy of the information provided.

Where any conflicts or concerns were found in the data provided, these were validated and confirmed with relevant Queensland Rail personnel so that the assessment and any analysis has been based on the most up to date data available from Queensland Rail, as far as is reasonably possible within the timescales available for the assignment.

## 2.3. DOCUMENTS REVIEWED

In developing this report the following documents were provided by Queensland Rail and reviewed.

- 04341695 Draft submission allocation of forward looking costs V2 161215
- 04341695 Paper costs allocations DR to Queensland Rail V2 161215
- 04341695 Queensland Rail maintenance cost categorisation V2 161215
- 15122015 2015 response to BH maintenance capital report
- West Moreton Asset management plan 201516 2<sup>nd</sup> Edition final
- WM Capex and Maintenance plan Coal Non-coal Allocation AU1 Final 2 (excel spreadsheet)
- Top-down maintenance approach MR edit (excel spreadsheet)

Other reference documents are as identified in the body of this report

EIG is not aware of any other Queensland Rail documents that may be relevant to the findings of this report

## 2.4. EIG APPROACH

To assess the reasonableness of the cost categorisation, EIG investigated the engineering aspects, in parallel with consideration of the regulatory framework and relevant economic requirements. Key engineering considerations were applied in, ensuring the information and analysis captured was sufficiently robust to make an informed professional opinion on Queensland Rail's key fixed and variable cost drivers. These key considerations included:

- West Moreton Network characteristics, limitations and constraints;
- Applied asset management, maintenance and engineering practices and standards;



- West Moreton Network traffic task historically and forecasted, operating environment and regulatory compliance requirements.

For economic considerations reference was made to Synergies “Queensland Rail’s Cost Allocation Methodology: A Review”

Figure 2 illustrates the key work paths investigated and the main activities undertaken by EIG under these work paths.

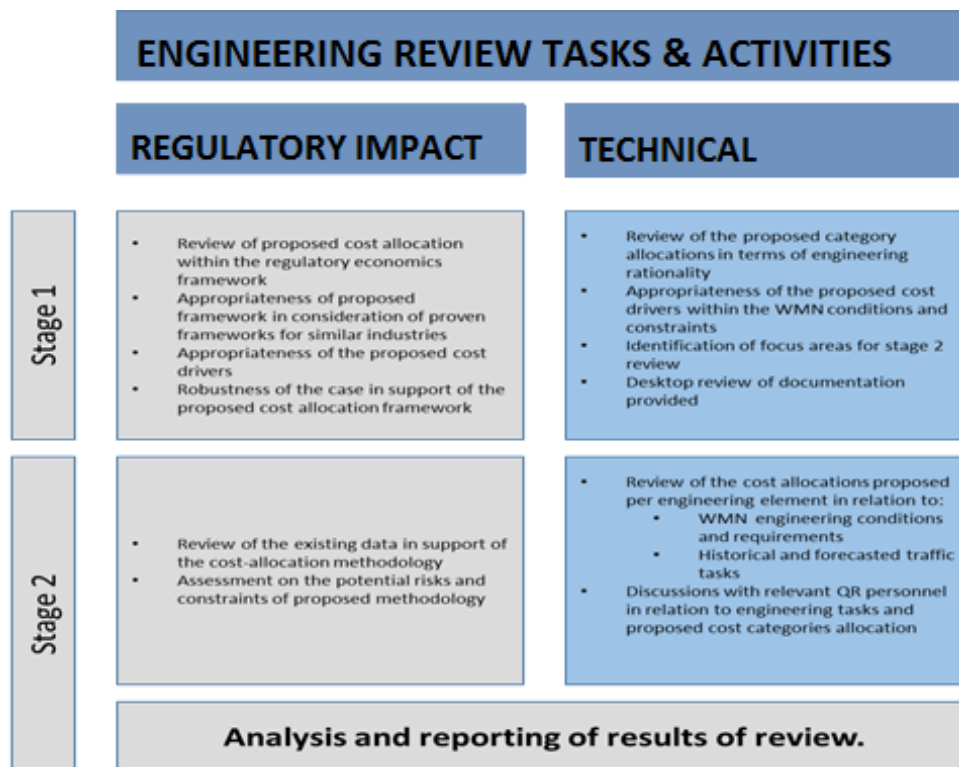


Figure 2 Summary of key activities and EIG approach

The resulting assessment has been presented and structure in this report in the following manner:

- Section 3: Background, general discussion and conceptual framework considerations put forward as a consequence of undertaking the review.
- Section 4: Engineering discussion and specific technical considerations put forward as a consequence of undertaking the review.
- Section 5: Summary of the allocation categories as proposed by Queensland Rail and substantiated by the Consultants review.
- Appendix A – Queensland Rail proposed spreadsheet allocation as revised by the review.

### 3. COST ALLOCATION FRAMEWORK

#### 3.1. GENERAL

In Queensland Rail's 2015 DAU proposal, Queensland Rail had proposed to allocate the forecast forward looking costs for the West Moreton Network between coal and non-coal services on the following basis:

- Maintenance costs to be allocated according to the forecast gtk usage of the network;
- Operating costs to be allocated according to the forecast train path usage of the network; and
- Future asset renewal capex costs to be allocated according to the forecast train path usage of the network. Queensland Rail did not forecast any capacity enhancement capex costs over the term of the 2015 DAU.

In response, the QCA proposes to depart from past practice and to adopt a new methodology which meant that, to the extent that charges reflect costs, there is in the QCA's view a closer allocation of costs to those parties responsible for their incurrence. This thus ensuring that, appropriate price signals are provided to customers, and relevant investment decisions are made by Queensland Rail.

Many factors drive the capital and maintenance costs of railway network infrastructure, including volume and mix of traffic, line and travel speed, climate and environment, design and standard of initial construction, rolling stock characteristics (Including axle loads, suspension, wheel type and profile) and track curvature. As a result, the cost of maintenance will vary dependent on the service type and pattern, as each service type will likely have different operational requirements, standards and impacts. Therefore the total cost will change over time in accordance with changes in the mix of services operated<sup>7</sup>.

A more detailed discussion is provided in the Synergies Consulting report "Synergies "Queensland Rail's Cost Allocation Methodology: A Review"

#### 3.2. QUEENSLAND RAIL'S CONCERNS WITH THE QCA APPROACH

In order to allow costs to be allocated to users in a way that more closely reflects the drivers of those costs, Queensland Rail has examined the QCA proposition and considers that if the QCA is to proceed with their cost allocation methodology a more appropriate categorisation would result from the forward costs being split across three components, as follows: common fixed costs, coal fixed costs and variable costs.

EIG has reviewed the two approaches, and for a mixed use network for which only 3 of the allocated 35 non-coal paths are used by non-coal services, believe that a split across three components is considered conceptually more appropriate. This latter approach disaggregates the fixed cost

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category proposed by the QCA into common and coal fixed cost categories. Thereby it is considered that this approach allows a closer alignment of cost allocation with the nature of the underlying cost and the parties causing those costs to be incurred. The QCA approach would likely result in unequitable or what may be considered “unfair” distribution and carrying of costs incurred to some parties.

However, care should be exercised in converting from the traditional allocation of forecast gross tonne kilometres usage to the application of either methodologies, as either is not without some risk of inappropriate allocation. A detailed understanding and analysis of cost items is required to assign costs unambiguously to the appropriate category.

### 3.3. DEVELOPING THE QCA APPROACH

In consideration of the levels of coal versus non-coal services on the West Moreton Network, in EIG’s view, if a cost categorisation methodology is to be adopted a more sophisticated approach should be adopted than currently suggested by the QCA. We consider that Queensland Rail’s view on allocating costs in three ways more closely reflects the true drivers of costs, and therefore, is more reflective of an impactor pays<sup>8</sup> approach. Therefore, it should more accurately reflect and allocate the costs imposed by coal users to those users. Such an approach does not represent price discrimination, an identified concern of the QCA<sup>9</sup>, as it reflects underlying cost differentials.

#### 3.3.1. Fixed Costs

With respect to fixed costs, we would expect that a significant driver for allocating fixed maintenance costs and capex would be the capacity required to meet a particular user’s requirement at a particular point in time. Consideration of both utilisation and load characteristics of coal haulage is relevant to this.

To the extent that a customer, or group of customers, requires a coal transport service which imposes higher capacity costs (whether due to the quantum of infrastructure required or due to load characteristics) then those coal customers should bear those higher costs. To do otherwise would impose ‘average’ costs on all users.<sup>10</sup>

The relevance of load characteristics has been previously accepted in Queensland for the purposes of other engineering transport systems, such as heavy road haulage where differential charges apply

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<sup>8</sup> Relevant QCA authority for an impactor pays approach is outlined in <http://www.qca.org.au/getattachment/bbd297ee-f25b-43b9-8d5a-d3b57f5914d8/Regulatory-Objectives-and-the-Design-and-Implement.aspx>. Other approaches are also referenced although it is not evident that a case can be made to adopt them in this instance.

<sup>9</sup> Queensland Competition Authority, ‘Draft Decision Queensland Rail’s 2015 Draft Access Undertaking October 2015’. Chapter 3.

<sup>10</sup> See concerns about use of averages in the following – [http://www.pc.gov.au/inquiries/completed/freight/submissions/national\\_transport\\_commission5/subdd101.pdf](http://www.pc.gov.au/inquiries/completed/freight/submissions/national_transport_commission5/subdd101.pdf)

to road transport according to the weight of the (heavy) load.<sup>11</sup> It has also been accepted by the QCA for the purpose of allocating capacity with respect to the Gladstone Area Water Board<sup>12</sup> and applied in the allocation of costs related to the supply of high and medium priority irrigation water.<sup>13</sup>

Whether particular costs are driven by usage or the load characteristics of coal rail services is further addressed in Section 4.

### 3.3.2. Variable costs

The QCA proposes to allocate variable maintenance costs between coal and non-coal traffic on the basis of gtk as initially proposed by Queensland Rail<sup>14</sup>.

EIG acknowledges, however, that Queensland Rail had indicated that other factors were also relevant and consider that the variable cost is materially affected by the heaviest and most contaminating load carried at any time. This does not appear to have been considered by QCA in their assessment<sup>15</sup>.

While gross tonnage/km (gtk) is traditionally adopted for allocating variable costs<sup>16</sup>, heavier axle loads and ballast fouling associated with coal haulage can be material cost drivers. As a result, gtk alone may not adequately allocate variable costs. Similar considerations affect heavy road haulage charges throughout Australia.

EIG notes that further work is required to determine how the impact of such other drivers is addressed in allocating variable costs.

## 3.4. CONCLUDING REMARKS

In EIG's opinion, we consider that Queensland Rail's new categorisation of costs further and beneficially develops the QCA's proposed approach by:

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<sup>11</sup> <http://tmr.qld.gov.au/Business-and-industry/Heavy-vehicles.aspx>

<sup>12</sup> Relevant QCA authority for such an approach can be found in QCA's review of Gladstone Area Water Board's proposal to base access charges on instantaneous flow rates – <http://www.qca.org.au/getattachment/ac7f6c6e-a312-4453-a96d-6e701a53bf30/Investigation-of-Pricing-Practices.aspx> (p47);

<sup>13</sup> [http://www.qca.org.au/getattachment/5fad8dc9-2101-4097-bdc8-d90d25fbfbbb/SunWater-Irrigation-Price-Review-2012-17-Volum-\(1\).aspx](http://www.qca.org.au/getattachment/5fad8dc9-2101-4097-bdc8-d90d25fbfbbb/SunWater-Irrigation-Price-Review-2012-17-Volum-(1).aspx)

<sup>14</sup> We note this is a traditional approach for allocating such costs

(see <http://www.accc.gov.au/system/files/Pwc%20review%20of%20cost%20alloc%20and%20O%20%26%20M%20April%202008.pdf> (p11))

<sup>15</sup> Relevant authorities for such an approach include its application to heavy road transport users – see <http://ntc.gov.au/heavy-vehicles/charges/charges-for-heavy-vehicles-2015-2016>.

<sup>16</sup> <http://www.tmr.qld.gov.au/business-industry/Heavy-vehicles/National-heavy-vehicle-charges.aspx>

- providing a more appropriate allocation on an “impactor pays” basis to that proposed in DAU;
- being consistent with the direction proposed by the QCA and other regulatory precedents including those of the QCA; and
- allowing the assignment of costs according to a deeper understanding of why such costs are being incurred.

However, we recognise that the successful implementation of more sophisticated methodologies for cost categorisation is dependent upon the quality of the available and relevant information. Whether a simplistic two way or a three-way split is adopted, a more detailed analysis will be required to firm up the cost splits. Although a three-way split will require slightly more analysis to ensure cost categorisations are robust, it is acknowledged that a simplified approach of separation of costs into only one fixed and variable component would result in an incorrect cost allocations and does not support in an efficient allocation of costs to customers.

## 4. ENGINEERING ASSESSMENT AND DISCUSSION

### 4.1. GENERAL BACKGROUND

The West Moreton System spans 314km from Rosewood to Miles and connects the Surat Basin coal mines (as far west as Columboola near Miles) with the Port of Brisbane (Fisherman Islands). The rail system was initially designed to cater for non-coal traffic and currently has a 15.75 tonne track axle load, a narrow track gauge and, for the most part, is single track configuration with passing loops.

The system contains several unique and challenging sections of track including the section between Helidon and Toowoomba which crosses the Toowoomba range. Previous studies have shown that this section of track over the range has been historically considered as one of the most expensive and challenging track sections in Queensland to maintain<sup>17</sup>. It is considered this is due to a combination of:

- the age and type of infrastructure;
- poor foundations and large quantities of black soils;
- poor access to enable major reparation of ballast; and
- poor formation across specific sections (i.e. the range).

Increases in usage over the system would require an overall proportionate and increasing requirement to rectify track and ineffective ballast across the system. Robust infrastructure management and maintenance regimes to ensure operational reliability and minimise any risk of infrastructure failure are critical, specifically; across the old pre 1980's timber bridge structures, around formations in the black soil plains and across the Little Liverpool Ranges many tight radius curves.

Therefore it is considered reasonable to assume that significant investment in infrastructure improvements from both Queensland Rail and West Moreton System end-users have been necessary to accommodate coal carrying train services on this system.

### 4.2. COST DRIVERS

Rail infrastructure ongoing costs consist of track renewals (capex) or maintenance. A range of drivers will influence the frequency with which these activities are undertaken and hence directly affect the costs. These factors include:

- volume and mix of traffic;
- line and travel speeds;

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<sup>17</sup> *Cost effective track maintenance on Queensland Railways*, F.Bell published in "Cost-effective maintenance of railway track" Institution of Civil Engineers, 1993, edited R.A.Vickers pp 203

- rolling stock characteristics (Including axle loads, suspension, wheel type and profile);
- climate and environment;
- design and standard of initial construction; and
- track curvature.

The last two drivers are determined during the initial design and construction stage. As a consequence of its history, (being designed for low volume, light weight traffic), the design of the West Moreton Network has not been optimised for the current rail task as it would if it were to be designed today. The first four can change throughout the life of the infrastructure and, as shown on Figures 3 and 4, the volume and speed will directly affect the track category and the life span of the asset, and hence have a direct effect on the level of infrastructure cost function.

Previous studies undertaken in the US<sup>18</sup> Canada<sup>19</sup> and United Kingdom<sup>20</sup> have shown that an increase in gtk creates a measurable increase in deterioration of rail infrastructure and hence cost of maintenance. Also, the category of track required to be safe and fit for purpose varies by speed and annual tonnage (refer Figure 3) and upgrading and / or maintaining track to a higher category drives increased costs. Whilst a given category of track is suitable for a wide range of tonnages, the increase in tonnage for which a quantum leap in track category is required for the line to remain safe and fit for purpose functionality, is smaller at lower tonnages per annum than at higher. That is, the track standard required increases, along with costs, more than proportionally with higher tonnages in such circumstances.

For instance, the UK Railtrack Co specified its Category 2 track as suitable for 16 to 38 million tonnes gross at an operating speed of 50 mph, however the differentiator between Category 5 and Category 3 at 50mph is only from 2 to 6 million tonnes gross (see Figure 3).

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<sup>18</sup> Uniform Railroad Costing System : 1980 Railroad Cost Study ICC 1982.

<sup>19</sup> Railway Engineering and Maintenance-of-Way Association ' Railway Costing: A Review 1984

<sup>20</sup> Office for Research and Experiments, (ORE) Committee

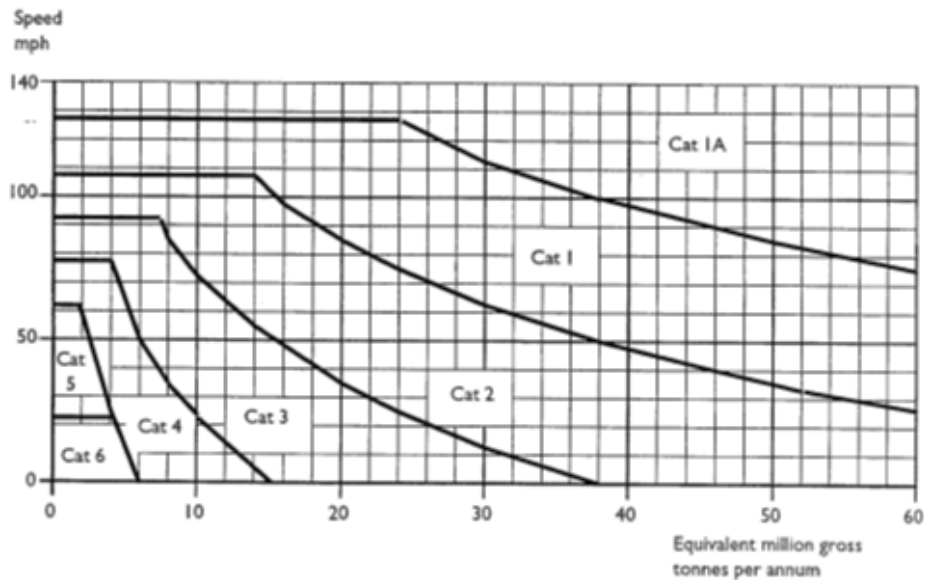


Figure 3 Categories of track per equivalent million gross tonnes per annum

Also noted from Figure 3, on heavy haul railways the standards of functionality and purpose required by the infrastructure varies more or less directly with volume in the long term. A measurable increase in the fit for purpose standard subsequently constitutes a financial investment in maintenance or the deferred expenditure will have to be committed in the subsequent period. Otherwise, train speeds and/or axle loads will need to be reduced to maintain safe operations.

The West Moreton Network was not initially designed for the volumes it is now carrying, which now includes around 6m tpa of coal haulage. For example by applying Figure 3, at an average speed of around 30 to 50 mph (approximately 48k to 80m/hr), increasing volume from 2 to 8 million gross tonnes per annum would increase the track category required from 5 to category 4 or even 3. Each category will have associated fit for purpose requirements as per an organisations civil engineering track and operational standards.

#### 4.2.1. Deferred drivers

Maintenance or renewal expenditure can be deferred. If this is the case, the effect of load increases is not measurable in the short term as it does not produce short term change in maintenance costs. However, in the long term the effects, in terms of asset deterioration, will become very evident and maintenance will either have to ramp up to meet them or significant capital expenditure will be required.

As previously mentioned rail infrastructure costs are a function of a combined integration of the track in terms of line speed and capacity, design and quality of construction. Each component and section of track has a “life” or baseline which defines the time span between two renewals, and this time span is defined by aggregate loading of traffic and service level, where the level of traffic and service supplied is decided upon in the design stage. Just as different types of service will have different



requirements which relate to track standards and quality, different traffic (trains) will have different impacts in terms of wear and tear on the infrastructure. The key issue for West Moreton Network is that applying different requirements to infrastructure that has been designed to a lower standard or quality can impose significant stress which can result in fatigue and a decrease in the life span and/or increased reparation and maintenance cycles for the asset.

As a long-lived asset, with a maintenance cycle of several years, in the short term, variations in costs caused through changes in levels of service (e.g. traffic volume changes or loading) may not be immediately apparent. This is because many of the cost changes will not manifest themselves until towards the end of the maintenance cycle, or not until signs of fatigue or failure require that the asset be renewed earlier than expected.

Therefore, as train tonne kilometres are a main driver for infrastructure wear and tear costs, it can be reasonably assumed that each additional service kilometre and/or gross tonne on a line will impose a cost because it moves forward the point in time at which the infrastructure must be rehabilitated or renewed. Once affected, without any rehabilitation, the point of time in the life span of the infrastructure prior to the additional service kilometres and/or gross tonnes being imposed (i.e. the previous condition) cannot be restored. Hence we note that a reduction of traffic in the short term cannot reduce the maintenance or cost function for the wear already imposed.

Thus to prolong the life span of the asset, and delay prohibitively expensive renewal projects, a “steady state” of maintenance needs to be applied in the long term which will result in maintaining the asset at a similar point of time prior to the deterioration. As the asset reaches its end of life, maintenance required to keep it in its steady state increases and renewal becomes prudent (Figure 4). As shown indicatively in Figure 4, the evident increase in “constant” (routine) maintenance requirements to keep the asset in its steady state condition during pre mid-life haul and after its mid-life haul is a direct function of age and/or usage.

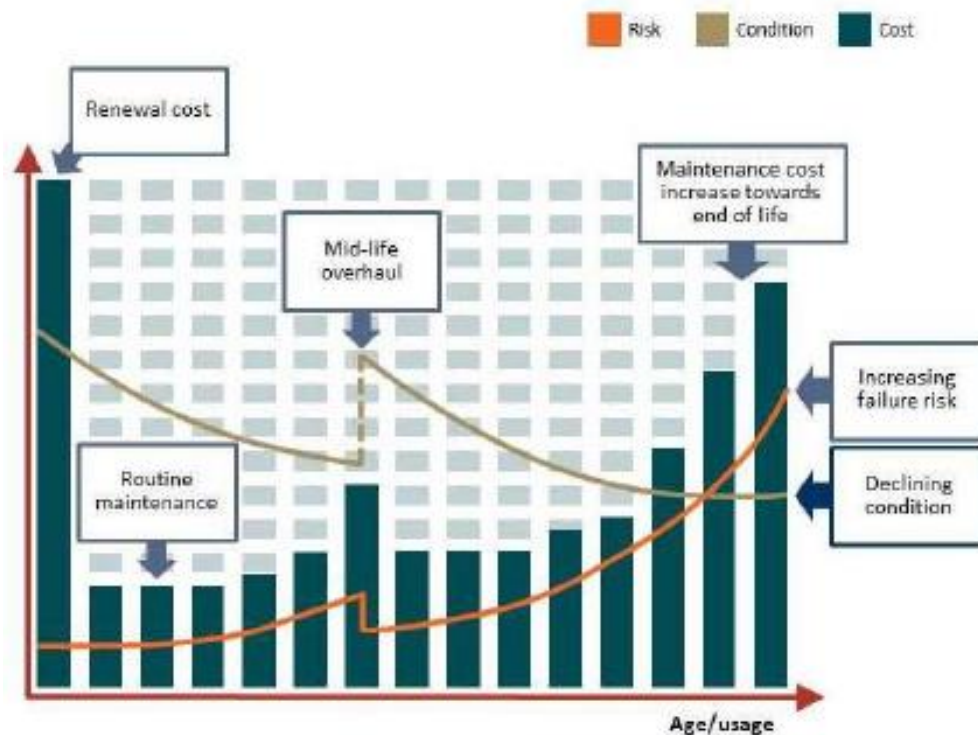


Figure 4 Maintenance and renewal costs of the lifecycle of an asset<sup>21</sup>

### 4.3. COST CATEGORISATION APPROACH

The network operator does not control market demand, particularly as access charges are regulated. Instead volume and mix of traffic are functions of the services required from the rail system and are therefore driven by the users of the system. Thus when considering mix of traffic, especially in consideration of non-coal and coal traffic, particular note has to be taken of the interaction between track quality and tonnage, that is, for the heavier loads the lines need to be constructed to higher standards. This means that variations in costs that will occur as a result of an increase from a relatively low volume non-coal traffic to coal traffic dominated services will not only be due to changes in usage but will also affect the requirements in terms of standard and quality of construction imposed by the coal traffic, which would not have necessarily imposed on the system without the coal traffic.

Therefore, in order to allow costs to be allocated to users in a way that most closely and accurately reflects the drivers of those costs, Queensland Rail has examined its forecast forward looking costs and in recognition of the QCA proposed approach has categorised them into common, fixed and variable cost components:<sup>22</sup>

<sup>21</sup> QCN Condition Based Assessment, Aurizon 2010 Access Undertaking, Evans & Peck 2013

<sup>22</sup> Note, the rationale for breaking the costs into these components is discussed in detail in Synergies' report: A Review of Queensland Rail's Cost Allocation Methodology"

#### 4.4. COST CATEGORISATION ALLOCATIONS

In general, it is EIG's opinion, that Queensland Rail's approach is considered to more equitably allocate costs compared to an approach which assigns the costs across fixed and variable components equally to all users without considerations of level of application and utilisation. The reasons for this are reflected in the discussion above. However, this conclusion is caveated by noting that a comprehensive detailed analysis will be required to firm up the cost splits and remove ambiguity from the assignment of costs to the appropriate categories.

Bearing this in mind, the following sections reflect that the development of this new cost allocation framework is a work in progress. This review has used the available information and the conceptual framework as it currently stands to provide the consultants estimates and comments in terms of ranges of costs allocated to particular categories. We have based our allocation on the following proposed definition for each of the components:

- **Fixed common costs:** not attributable to a single user of the system, or which would be incurred simply to maintain the infrastructure in a steady state on the expectation of a minimal number of regular train services utilising the network, i.e. to keep the line open. These costs are generally predetermined and remain stable across a broad range of service intensities. These include the sum off:
  - Totally common unavoidable costs: critical to running a railway network and which do not get affected by trains. These include items such as fencing, fire management, vegetation clearance, regulatory structural inspections, pest control and the like. It is anticipated that even without trains these categories will need to be carried out to maintain the safety or regulatory integrity of the asset. These costs are all categorised as fixed and constant;
  - Basic service non-coal fixed costs: these are costs required to maintain the asset to a steady state in line with efficient life span and functional requirement, which is to maintain the line fit for purpose for a limited non-coal usage of under 1mtpa. Examples include communications, signalling and control, level crossing maintenance. Although over the long run a small percentage of these costs can be classified as variable, over the period for which costs are forecast the majority of the costs included under this category are a constant component for which a small change in usage will not alter or trigger a new preventative maintenance regime until a quantum step in use occurs<sup>23</sup>.

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<sup>23</sup> It is noted that there is a small percentage of variable costs within what would be a steady state basic service cost regime. However as empirical evidence indicates that this percentage of variable for low tonnages is relatively small, at this point in the development of the concept it was considered prudent to roll these costs into the fixed costs until further analysis and data can provide sufficient information to allow disaggregation of these costs.

- **Coal service fixed costs:** comprise the fixed costs of maintaining and renewing the West Moreton Network that are in excess of the calculated common cost, and which are triggered by the need for the network to be able to operate coal services with a tonnage profile that is currently greater than 6mtpa. Whilst over the long-run, these costs can all be classified as variable, over the period for which costs are forecast, many of these costs would be classified as a fixed constant component. This component should be constant once a steady state has been achieved and will not alter again for small changes in use or trigger a significant change in the maintenance regime until a further quantum step in usage occurs; and
- **Variable costs:** comprise those costs that respond to changes in the tonnage profile within the cost forecasting period. Previous studies have concurred that in low volumes of traffic there is little variability but this quickly increases to around 20% variability at 5MGT and 30% at 10MGT, rising significantly therewith<sup>24</sup>. These changes in variability align with historic empirical maintenance cost data and the bottom up estimates undertaken by Queensland Rail to substantiate the proposed cost splits.

By splitting the cost into these three cost categories, a more robust cost allocation methodology is able to be implemented as compared to the QCA's proposal that has, as far as possible and practical (on the basis of available information), a more direct link between the costs being incurred and allocated on the basis of the impactor pays principle.

If proceeding on the basis of the above approach, it is noted that the costs of providing rail network operations, maintenance and renewal will vary between networks with the underlying usage of the network. The extent to which the costs change in response to changes [and differences] in usage will vary from service to service and, because demand for rail access services is heterogeneous in nature, in accordance with changes in the mix of services operated. Consequently separate analysis needs to be undertaken specifically for each network.

#### 4.5. INTERIM MODELLING

EIG considers that the methodology must be transparent and repeatable and ensure sufficient funding for prudent maintenance in alignment with the operational requirements and standards applicable to each user, whilst minimising the penalisation of other users.

In the time available to respond to the Draft Decision, it has not been possible for Queensland Rail to develop a detailed and robust categorisation of costs into common, fixed and variable

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<sup>24</sup> Uniform Railroad Costing System : 1980 Railroad Cost Study ICC 1982, A guide to Railroad Cost Analysis Bureau of Railway Economics AAR, American Railway Engineering and Maintenance-of-Way Association Railway Costing: A Review 1984, Queensland Competition Authority; Usage-related infrastructure maintenance costs in railways White paper 2000

maintenance and capex costs for consideration<sup>25</sup>. However Queensland Rail has prepared an indicative estimate of such a categorisation, in order to demonstrate the problems associated with a simple fixed versus variable cost split. A sound and insightful desktop assessment was carried out by EIG on the major cost items most impacted by the cost allocation methodology, In general these items included all the major maintenance cost items such as:

- Ballast undercutting
- Formation strengthening
- Rail renewal
- Mechanical resurfacing
- Check rails
- Relay Oakey to Jondaryn
- Timber bridge upgrades

On completion of the assessment of these major items a further and more general assessment was carried out on the remaining activities itemised in Queensland Rail's cost allocation spreadsheet. The results and discussion from the detailed assessment are summarised in section 5 of this report with any modifications or comments on all the cost items provided in Appendix A.

#### **4.6. VARIABLE VERSUS FIXED ALLOCATION**

International and national studies and historical empirical data have indicated a variation in the long term variability of track-related expenditure being typically in the range of 30 to 60% against fixed expenditure costs, with the higher variabilities associated with higher tonnages<sup>26[1]</sup>. At low tonnages, studies have shown that only a small amount of the maintenance cost is variable but this increases to around 20% at 5MGT and 30% at 10MGT for concrete and about 10% more for timber. As track asset infrastructure renewals become increasingly tonnage-based with increases in overall gross tonnages the variabilities incrementally increase from around 45-55% at 20MGT to over 80% at 60MGT<sup>[2]</sup>. It appears that these percentages quoted are reflected in the cost curves and bottom up estimates which form the basis of Queensland Rail considered cost allocations as assessed for this report<sup>[3]</sup>

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<sup>25</sup> Equally EIG noted that the proposed allocation put forward by QCA, appears not to have been developed on a collaborative approach or based upon empirical historic data.

<sup>[1]</sup> Usage-related infrastructure maintenance costs in railways, Queensland Competition Authority 2000

<sup>[2]</sup> Uniform Railroad Costing System : 1980 Railroad Cost Study ICC 1982, A guide to Railroad Cost Analysis Bureau of Railway Economics AAR, American Railway Engineering and Maintenance-of-Way Association Railway Costing: A Review 1984, Queensland Competition Authority; Usage-related infrastructure maintenance costs in railways White paper 2000

<sup>[3]</sup> West Moreton Network Common, Fixed and Variable Maintenance and Renewal Costs, Queensland Rail Dec. 2015

It is acknowledged that the actual value for track variability with gtk must be ascertained from the individual network not ascertained from desktop studies of railways elsewhere<sup>[4]</sup>.

In addition, what is evident from the literature and Queensland Rail's cost analysis is that the assessment of the extent of fixed costs versus variable appears to be dependent upon the volume horizon and the time horizon assumed. That is, not only are fixed and variable costs associated with tonnages but the longer the time horizon considered, the greater proportion of costs that can be considered variable.

However, when it comes to defining short term variability, there is limited literature and discussion. Thus "short-term" is invariably underfined and, as discussed above, as it is recognised that as there is an inherent inability to change maintenance regimes in the short term, it becomes evident that maintenance costs are more or less fixed in the "short-term", where the duration of the short term is considered reasonable for about two/three years.

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<sup>[4]</sup> Manual for Railway Engineering, American Railway Engineering and Maintenance-of-Way Association, 1999,

## 5. ACTIVITY COST ALLOCATIONS

Figure 5 summarises the cost allocations for the engineering activities assessed. Figure 5 demonstrates that a detailed understanding and analysis of cost items is required to assign costs unambiguously to the appropriate category.

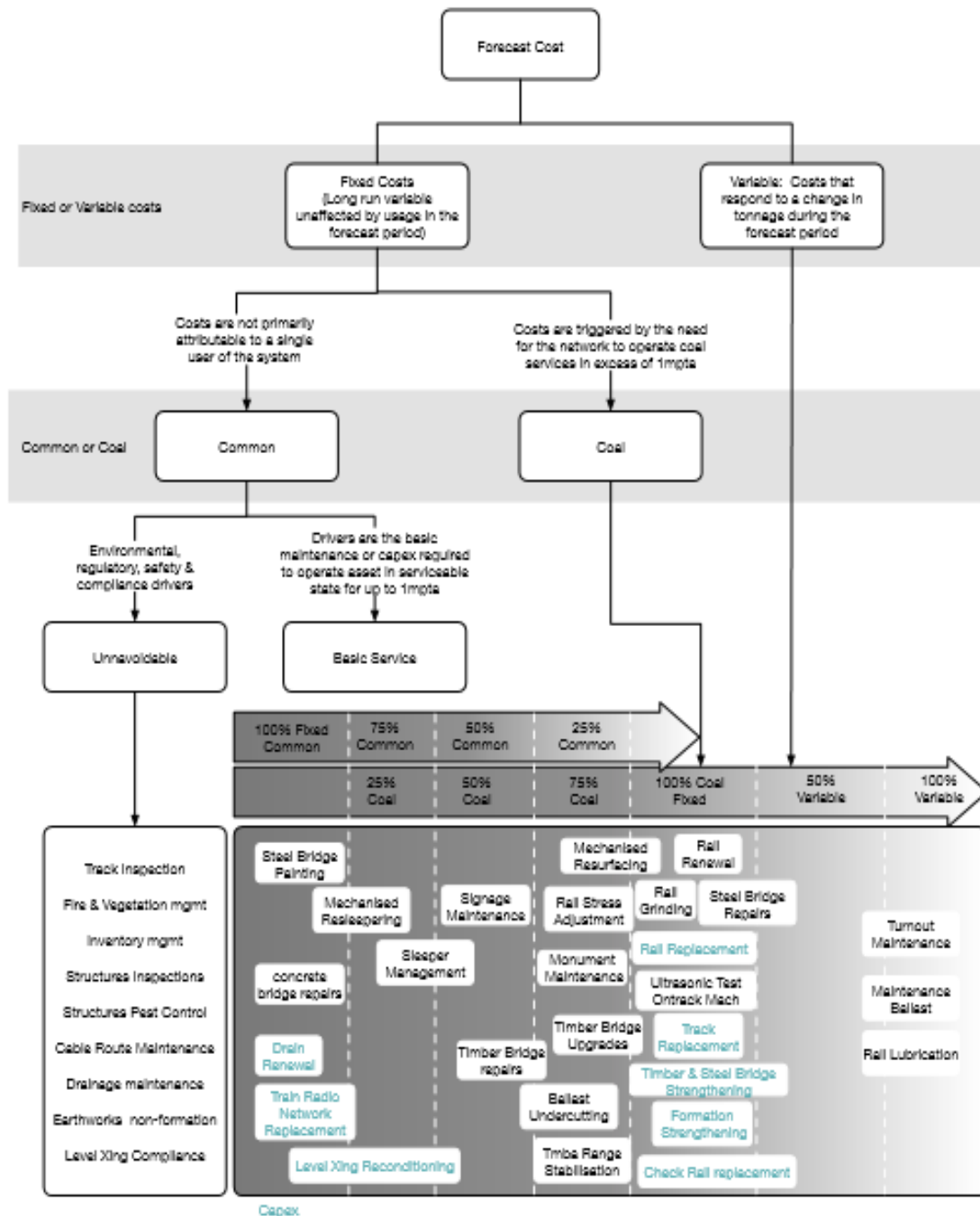


Figure 5 Summary of proposed cost allocations

Hence at this conceptual stage costs have been assigned on a “best reasonable” consideration basis, having been developed and negotiated in consultation between Queensland rail and EIG

engineering representatives. Consultations were based upon a review of historic and forecast data, professional knowledge and experience in comparable national and international networks. In summary, the figures presented in Table 1 have been allocated in agreement with EIG and Queensland Rail engineers and in consideration of the capex, operational and maintenance data available for this assessment.

The following section discusses the considerations and conclusions reached.

## 5.1. BALLAST UNDERCUTTING AND FORMATION STRENGTHENING

QCA's Independent Consultant B&H undertook a review of the prudence of scope and forecasts submitted by Queensland Rail and stated that it considers that Ballast Undercutting in the 2015 DAU appears to have replaced Track Reconditioning, which was an activity in Queensland Rail's 2013 Draft Access Undertaking (2013 DAU).

B&H further surmises that the purpose of Ballast Undercutting and Formation Repair (the latter of which is a capital project included in the 2015 DAU) has the same effect, to prolong the life of the formation and that the two programs are essentially the same activity even though one activity requires more intervention than the other. Therefore, B&H conclude that both programs should be combined into one activity under the capital program which would mean that the Ballast Undercutting project would be treated as capital rather than as a maintenance activity.

Queensland Rail's position is that the scope for the Ballast Undercutting program is for track lowering activities. This work is associated with the lowering of track in locations of excessive ballast depth, where track stability and vertical alignment is difficult to maintain. This program is not proposed as a substitute for formation repairs. This activity reuses existing ballast and removes excessive ballast depth to regain stability of the track structure. Hence there is no replacement with new ballast and there is not an extension of the ballast life, just reductions in top and line and improved track stability.

Consequently, in alignment with the methodology Queensland Rail is considers that:

- 49-57% of the total annual ballast undercutting forecast costs are coal fixed. This is a net allocation of approximately 85% of ballast undercutting costs to coal.
- 100% of the formation strengthening capex expenditure is a coal fixed cost that would not be incurred in the DAU period if not for the coal carrying traffic.

EIG considers that in a minimal service scenario it would be reasonable to assume that, with the exception for minimal soft spot remediation to maintain top and line over the network, the requirement for formation strengthening would be dramatically reduced.

EIG agrees with Queensland Rail's definition of ballast undercutting as a maintenance activity.

EIG agrees with the allocation of 99% of formation strengthening Capex to coal as notionally it considers it reasonable to expect no, or a very limited amount of, such work would be required in the absence of coal traffic. From previous experience and knowledge of comparable systems it is



considered reasonable to allow for an amount, no greater than 1% of the forecast costs to be required to maintain the track for minimal traffic over the DAU period.

## 5.2. RAIL RENEWAL

B&H consider that the Rail Renewal project carries out the same work as undertaken in the Rosewood to Helidon rerailling project<sup>27</sup>

B&H state that the proposed works in Queensland Rail's capital program are on the basis of replacing 41kg/m rail with 50 kg/m rail, while the works in this maintenance program are based upon the replacement of like for like which will be 50 kg/m. QCA disagree with Queensland Rail's forecast rail renewal cost.

Queensland Rail proposes that 100% of both the Rail Renewal maintenance activity and Capex Relay Rosewood to Helidon are allocated to coal. It is of note that this section of track is amongst the oldest in the railways of Queensland and in many regards, demonstrates the weaknesses resulting from early primitive construction practices and materials persevering unto the current age. Track alignments and track foundations particularly would not be tolerated today.

Although the original rails and sleepers have been improved so that now there is heavier rail and steel and concrete sleepers as opposed to timber in many places, the primitive alignments and foundations largely still remain. Even with the upgrade in some components, the track is not well suited to carry what could be classified as minimal heavy haul traffic.

When the coal traffic began to be offered, Queensland Rail had options concerning how to accommodate the traffic. In a "do nothing" option, it could reasonably be expected that all maintenance costs would escalate exponentially. The increasing maintenance required would result in reduced numbers of train paths for the paying traffic, speed restrictions would become more common, and transit times would increase. Additionally, as was proved in the late 1960's in Central Queensland, when such increasing traffic is carried on sub-standard track, a plethora of derailments is inevitable.

The new track structures implemented by this project are expected to improve reliability on the network and reduce the possibility of track related derailments.

Queensland Rail proposes to allocate 100% of both the rail renewal maintenance of both the rail renewal maintenance activity and capex relay Rosewood to Helidon to coal. EIG considers this is reasonable as it more appropriately reflects an impactor pays regime. Even though the replacement of these sub-standard sections of the network will benefit all users it would likely not be required under minimal traffic.

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<sup>27</sup> APR 12545 RELAYING (Rerailling) PROGRAM ROSEWOOD – HELIDON" in Queensland Rail's capital program

### 5.3. MECHANISED RESURFACING

B&H outline that because of the extensive resurfacing work being done in the 15/16 year with resleepering, and the ongoing capital works extending resurfacing intervals, the program is not regarded as efficient. B&H recommend a reduction of resurfacing in 15/16 and a reduction of \$1.8m in the remaining regulatory period *“...in order to better reflect the trend of spending previously achieved and in the context of the reduction in traffic levels.”*

Queensland Rail agrees in principle with B&H's assessment that the Mechanised Resurfacing Program can be reduced in 2015/16, based on the philosophy of the resleepering works, however strongly disagrees with the quantum of the proposed reduction. Queensland Rail proposes a \$500,000 reduction, in the Mechanised Resurfacing programme for 2015/16. This is representative of the influence that the Resleepering with Resurfacing Capacity will have on the resurfacing programme.

Considering the need for mechanised resurfacing is directly related to the coal rail traffic volumes that intensify top and line issues naturally associated with a network predominantly founded on volatile material that dramatically shrinks/swells in wet/dry cycles it is reasonable to conclude that a higher percentage of these mechanised resurfacing costs are coal fixed. The impact of coal trains results in further degradation of the timber sleepers with the resultant being assumed to be approximately 80% fixed.

From the information provided, discussions with relevant Queensland Rail engineers and knowledge of these activities in comparable networks, EIG consider the proportion of mechanised resurfacing forecast costs allocated to Queensland Rail to be reasonable.

### 5.4. CHECK RAILS

B&H & Queensland Rail disagree on the appropriateness of the cost forecast for checkrail curves. EIG did not make an assessment on the reasonableness of the standalone checkrail cost forecast however consideration was given to the proposed cost allocation.

Queensland Rail proposes that 100% of the checkrail curve costs are allocated coal fixed costs. EIG's understanding is that the current checkrail program involves the implementation of a new system to reduce maintenance costs associated with the replacement of checkrail bolts in particular in the Toowoomba range section.

The Civil Engineering Track Standards (CETS) adopted by Queensland Rail require that all Queensland Rail curves of radius 120 m or sharper must be fitted with a check rail to reduce the effects of the centrifugal forces on the high leg, unless certain provisions apply. There are seven such curves in the Little Liverpool Range area and some 40 on the Toowoomba Range. The length of sharp curves is 1.055 km for the first area and 7.895 km in the second, a total of 8.950 km.

Throughout these tight curves it has been found historically that with the passage of heavy traffic the in-traffic transverse forces applied are such that the bolts holding the check rails in place are

gradually forced out. With minimal heavy traffic this can be mitigated by deploying track workers to monitor and replace bolts as maybe necessary. This can be done without disrupting train services.

However, with the onset of increased heavy haul traffic Queensland Rail has stated that the costs and impact of the monitoring and replacements increased to unacceptable levels and alternative solutions needed to be implemented. Considering this, it is reasonable to conclude that the implementation of the checkrail program is dependent on the increase in heavy haul traffic, and as such EIG consider Queensland Rail's allocation of costs reasonable. That is, a 100% allocation of checkrail costs to coal fixed costs.



*Figure 6 Existing curve with check rail (and mudhole)*

## **5.5. RELAY OAKEY TO JONDARYN**

In 2011, Queensland Rail engaged the Transportation Technology Centre, Inc. (TTCI) from USA to comment on the works required to bring the West Moreton Network tracks to standard for the traffic. One recommendation of TTCI was that the section between Oakey and Jondaryan was sub-standard and the section was required to be relayed, with formation works<sup>28</sup>. This specific recommendation related to the increase requirements arising from increased coal traffic based upon the location of the Jondaryan Mine, to the north of the railway. Some nine trains a day originate

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<sup>28</sup> WorleyParsons report "AU1 West Moreton Reference Tariff Submission Review" August 2013

from this mine, so the track under consideration carries the full loading from all mines in the West Moreton. Prior to these works a 25km/h speed restriction was applied near Jondaryan.

Queensland Rail considers an allocation 100% of the forecast costs for the upgrade of the 12km section between Oakey and Jondaryn to coal fixed costs to be appropriate. EIG consider this is reasonable as even though the replacement of this sub-standard section of the network will benefit all users it would likely not be required under minimal traffic.

## 5.6. TIMBER BRIDGE UPGRADES

The requirement for strengthening structures to enable greater loading capacity and prolong the life of the structure is driven primarily by traffic loadings and volumes.

Aged timber bridges are notoriously difficult and expensive to maintain, in addition the timber bridges on the West Moreton Network were originally designed for a “B16 12 ton (imperial) axle load with steam impact”. This loading aligned with that for 15.75 tonne (refer notes Queensland Rail Standard Timber Bridges Drawing No. 1932 Issue B 1980). In addition it is reasonable to assume the loading design would not have complied with the current Australian structural design standards and may not have considered structural fatigue in terms of cyclic loading. The potential overloading of a structure can lead to loss of structural integrity and hence a high level of monitoring and maintenance is critical to minimise any risks of catastrophic failure<sup>29</sup>.

Queensland Rail has stated that an allocation of 100% of the significant capex forecast costs for timber bridge replacement to coal fixed costs is applicable. This is based on the expectation that although it is acknowledged that the timber bridges will need to be replaced at some time in the future, the bridges would not need to be replaced under a minimal traffic scenario during the DAU period. In consideration of long term effects of cyclic loading and the current state of the timber structures on the network EIG considers this proposed allocation reasonable.

## 5.7. OTHER

Tables 1 and 2 summarise EIG’s considerations and discussions in relation to other cost elements, Appendix 1 provides Queensland Rail costs allocation split that were assessed and confirmed in principle to be appropriate at this stage of analysis.

Table 1 West Moreton Maintenance Plan 2015-20 Budget

Description	Forecast Costs	Common costs	% Common Costs <sup>1</sup>	% Fixed Coal Costs <sup>2</sup>	Comments
<b>TRACK AND CIVIL INFRASTRUCTURE</b>					
Repairs Concrete Bridges	150	150	100%	0%	Forecast Expenditure Appears Reasonable. This should be considered a fixed cost

<sup>29</sup> WorleyParsons report “AU1 West Moreton Reference Tariff Submission Review” August 2013

Description	Forecast Costs	Common costs	% Common Costs <sup>1</sup>	% Fixed Coal Costs <sup>2</sup>	Comments
Repairs Steel Bridges	1237	247	20%	80%	Fatigue cycles are accumulative - key drivers include of surface condition, load, temperature, and extent of corrosion or size of member - hence the additional loading will result in increased deterioration and trigger increased reparation requirements. The costs associated with the repairs of these structures should be either considered coal fixed or allocated on a gtk basis – with some minor portion allocated to common costs.
Repairs Timber Bridges	6267	3500	55%	45%	As above fatigue cycles accumulative and due to loading - however with timber other key drivers include fungal, termites, weathering, shrinkage and splitting etc. - so would expect to see a greater share in the fixed across the board costs - which are reflected in the numbers - i.e. the timber structures would need significant reparation or renewal with even minimum traffic.
Steel Bridge Paint (Contract)	6200	5700	92%	8%	As previously discussed this involves painting of a major structure - this is critical for corrosion protection and durability however is always creates a peak in bridge maintenance costs. Requirements for this work are based upon environmental exposure of the structure rather than usage or tonnage, i.e. dependent on level of airborne salts, humidity and moisture, other contaminants, temperature and wind etc. which the structure is exposed to. Cost, which will be impacted by the coating application requirements, will thus also be affected by the same key variables. Although it is anticipated that traffic loading may increase airborne levels of salts and hence may impact - believe that this would be the lesser of the key variables mentioned above.
Structures Inspection	2207	1602	73%	17%	The requirements for structural inspections are fixed and determined by the CESS standards and do not vary with traffic volume. However it is considered that for those structures reaching end of asset life and fatigue, monitoring will need to increase and levels of inspection may need to be enhanced – i.e. structures may require 6 monthly as opposed to two yearly inspections.
Structures Pest Control	75	75	100%	0%	Fixed common costs regardless of traffic task
Drainage Construction	200	200	100%	0%	Fixed common costs regardless of traffic task
Drainage Maintenance	1664	1664	100%	0%	Fixed common costs regardless of traffic task
Retaining Wall Maintenance	80	80	100%	0%	Fixed common costs regardless of traffic task
<b>Structures and Civil Total</b>	<b>18080</b>	<b>13218</b>	<b>73%</b>	<b>27%</b>	
Ballast Undercutting Other	6770	3000	44%	66%	Ballast undercutting is in practice a track lowering activity. The existing high ballast spots are primarily attributable to the historical coal traffic. The requirement for the remediation of these high spots exists even in a minimal service scenario however a portion of the forecast cost is categorised as coal fixed to reflect an accelerated program to meet the 6mpta demand.
<b>Ballast Undercutting Total</b>	<b>6770</b>	<b>3000</b>	<b>44%</b>	<b>56%</b>	

Description	Forecast Costs	Common costs	% Common Costs <sup>1</sup>	% Fixed Coal Costs <sup>2</sup>	Comments
Earthworks - Non Formation	515	515	100%	0%	
<b>Earthworks Total</b>	<b>515</b>	<b>515</b>	<b>100%</b>	<b>0%</b>	
Minor Yard Maintenance	1150	650	57%	43%	An allocation of coal fixed costs in the minor yard maintenance activity is proposed to reflect the predominance of coal traffic in the maintenance yards during maintenance closures.
Rail Joint Management	6521	1500	23%	77%	Currently the program involves reducing the potential for loose fishplates and bolts in the jointed track by welding out to 220m lengths. In a minimal service scenario this program would not be required. As such a coal fixed allocation of 75% has been reasonably proposed.
Rail Renewal	4655	0	0%	100%	The requirement to replace rail is driven solely by the forecast coal traffic volumes. In a minimal service scenario the rail renewal activity would not be undertaken. This is reflected in other parts of the Queensland Rail network with similar age track operating minor freight and passenger services without the need for a rail replace program.
Turnout Maintenance	750	375	50%	50%	The requirement to maintain turnouts is directly related to tonnage.
Mechanised resleepering	16334	13067	80%	20%	Refer to discussions above
Monument/Signage Mtce	897	300	33%	67%	The survey monumenting program is focused on the requirement for greater alignment control across the Toowoomba range section of the network. The driver for this program is the impact of the coal trains wheel rail interaction imparting forces that attempt to straighten the track through the tight curves.
Maintenance Ballast	3635	2540	70%	30%	Varies highly with tonnage, axle load, speed and traffic density –
Sleeper Management	2580	2015	78%	22%	A change in track category in CETS would allow a higher percentage of defective sleepers and reduce sleeper requirements. Varies highly with tonnage, axle load, speed and traffic density – some common costs
Fire & Vegetation Mgmt	6991	6991	100%	0%	All common costs
Rail Stress Adjustment	3954	1500	38%	62%	In a minimal service scenario the additional rail stress testing required for the 6mpta case would not be required. Further to this the requirement for creep monitoring would be reduced from every 2km to 5km. It is reasonable that >60% of the forecast costs are categorised as coal fixed.
Track Inspection	3921	3921	100%	0%	
Rail Lubrication	1296	500	39%	61%	Rail lubrication varies with tonnage.
Top & Line Spot Resurfacing	6852	3000	44%	56%	This product relates to tonnage. Deterioration of top and line would be reduced due to the significant reduction of traffic.
Rail Repair	6108	1250	20%	80%	This product relates to tonnage. Fishplate and bolts would reduce significantly as would internal rail defect closure requirements.

Description	Forecast Costs	Common costs	% Common Costs <sup>1</sup>	% Fixed Coal Costs <sup>2</sup>	Comments
<b>Track Maintenance Total</b>	<b>65644</b>	<b>37609</b>	<b>57%</b>	<b>43%</b>	
Mechanised Resurfacing	14500	5000	35%	65%	65% of the resurfacing activity is categorised as coal fixed to reflect the relative impact of coal traffic.
Mech Resurfacing Turnouts	360	120	33%	67%	65% of the resurfacing activity is categorised as coal fixed to reflect the relative impact of coal traffic.
<b>Resurfacing Total</b>	<b>14860</b>	<b>5120</b>	<b>34%</b>	<b>66%</b>	
Rail Grinding - Mainline	2773	0	0%	100%	In a minimal service scenario this activity would not form part of the maintenance program. A 100% allocation to coal traffic is appropriate.
Rail Grinding - Turnouts	553	0	0%	100%	In a minimal service scenario this activity would not form part of the maintenance program. A 100% allocation to coal traffic is appropriate.
<b>Rail Grinding Total</b>	<b>3326</b>	<b>0</b>	<b>0%</b>	<b>100%</b>	
Track Geometry Recording	755	755	100%	0%	
Ultrasonic Test Ontrack Mach	1000	0	0%	100%	This product relates to tonnage. CETS Appendix 1B
Ultra-Sonic Testing (Manual)	324	160	49%	51%	
<b>Track Monitoring Total</b>	<b>2079</b>	<b>915</b>	<b>44%</b>	<b>56%</b>	
<b>TRACK AND CIVIL Total</b>	<b>111274</b>	<b>60377</b>	<b>54%</b>	<b>46%</b>	
Fencing	250	250	100%	0%	
Level crossing maintenance	400	250	62%	38%	Deterioration of top and line impacted by tonnage and traffic, however assume this cost also includes deterioration of surface which is dependent on road traffic
Level crossing constr/recond	569	0	0%	100%	This is a common cost. The product is to be capitalized
<b>FACILITIES Total</b>	<b>1319</b>	<b>500</b>	<b>41%</b>	<b>59%</b>	
Preventative Telecoms Backbone Maintenance	535	535	100%	0%	
Phone/Data Maintenance	29	29	100%	0%	

Description	Forecast Costs	Comm on costs	% Comm on Costs <sup>1</sup>	% Fixed Coal Costs <sup>2</sup>	Comments
<b>Telecom municati ons Total</b>	<b>564</b>	<b>564</b>	<b>100%</b>	<b>0%</b>	
Prevent Signalling Field Mtce	4113	4113	100%	0%	
Correct Signalling Field Mtce	1124	894	80%	20%	Part of the cost forecast for this activity is categorised as coal fixed to reflect the relationship between corrective faults and traffic volumes
Signalling Level Xing Protect	2589	2589	100%	0%	
Cable Route Maintena nce	980	980	100%	0%	
Signalling Train Protect System	255	255	100%	0%	
Wayside Monitorin g System	299	299	100%	0%	
<b>Signal Maintena nce Total</b>	<b>9360</b>	<b>9130</b>	<b>98%</b>	<b>2%</b>	
<b>SIGNAL LING Total</b>	<b>9924</b>	<b>9694</b>	<b>98%</b>	<b>2%</b>	
<b>Sub-Total Maintena nce</b>	<b>122417</b>	<b>70571</b>	<b>58%</b>	<b>42%</b>	
<b>General</b>					
Inventory & Minor Asset Mgmt	580	580	100%	0%	
Consultin g/Technic al Advice	1900	250	13%	87%	Consulting and technical advice is primary required for the review of fatigued or degraded infrastructure or forward looking improvement programs. In a minimal traffic scenario the requirement for these consultants would be virtually nil.
Asset Manage ment	3105	2000	64%	36%	
Project Mgmt & Services	295	150	51%	49%	In a minimal traffic scenario very limited operational projects would be required.
<b>GENERA L Total</b>	<b>5880</b>	<b>2980</b>	<b>51%</b>	<b>49%</b>	
<b>GRAND TOTAL</b>	<b>128297</b>	<b>73551</b>	<b>57%</b>	<b>43%</b>	

Notes: 1 & 2 Includes variable component as per Table 3



Table 2 West Moreton Capital 2015-20 Budget

Product Description	Forecast cost (\$,000s)	Common Cost (\$,000s)	Common Cost %	Comments
Formation Strengthening	3,006	120	4%	In a minimal service scenario the requirement for formation strengthening is dramatically reduced. An allowance has been made outside coal fixed costs for soft spot remediation to provide adequate top and line.
Timber bridge upgrades	28,099	9,366	33%	
Steel Bridge Strengthening	2,000	0	0%	The requirement for this activity is driven by the forecast coal traffic volumes. In a minimal service scenario the bridge strengthening requirements could be mitigated by further speed limiting and the existing maintenance program.
Timber bridge strengthening	1,999	0	0%	The requirement for this activity is driven by the forecast coal traffic volumes. In a minimal service scenario the bridge strengthening requirements could be mitigated by further speed limiting and the existing maintenance program.
Tmba Range Stabilisation	7,500	2,500	33%	
Timber and Steel Bridge repl with RCBC	2,200	0	0%	
Formation Strengthening	12,130	480	4%	In a minimal service scenario the requirement for formation strengthening is dramatically reduced. An allowance has been made outside coal fixed costs for soft spot remediation to provide adequate top and line.
Drain Renewal	7,000	7,000	100%	
Isaac Street Timber Bridge Upgrade	1,000	0	0%	The requirement for this activity is driven by the forecast coal traffic volumes. In a minimal service scenario the requirement for bridge upgrade could be mitigated by further speed limiting and the existing maintenance program.
<b>Civil Program Total</b>	<b>64,934</b>	<b>19,466</b>	<b>30%</b>	
Corridor & Asset Protection (WM Portion)	1,758	0	0%	
Corridor & Asset Protection (WM Portion)	1,025	0	0%	
<b>Condition Monitoring Total</b>	<b>2,783</b>	<b>0</b>	<b>0%</b>	
Solar Track Feed	385	385	100%	
Model 10 Boom	300	300	100%	
Upgrade Alternators Grandchester, Yarongmalu, Rangeview	450	450	100%	
Digital Telemetry	960	960	100%	
Level Xing Compliance	3,930	3,930	100%	
Siemens AZ S600 Axle	1,071	1,071	100%	

Product Description	Forecast cost (\$,000s)	Common Cost (\$,000s)	Common Cost %	Comments
Counter Replace				
Pedestrian Xing Installation	1,150	1,150	100%	
Pole Route Upgrade Grandchester to Laidley	850	850	100%	
DTC Automatic Code Exchange	460	460	100%	
Level Xing Install remote monitoring	525	525	100%	
ATP Encoder Replacement	500	500	100%	
Siemens AZ S600 Axle Counter Replace	511	511	100%	
Upgrade Asbestose Loc Boxes	450	450	100%	
Pedestrian Xing Installation	2,750	2,750	100%	
<b>Signalling Program Total</b>	<b>14,292</b>	<b>14,292</b>	<b>100%</b>	
Train Radio Network Replacement	2,125	2,125	100%	
LEDR Radio System Replacement	69	69	100%	
<b>Telecomms Program Total</b>	<b>2,194</b>	<b>2,194</b>	<b>100%</b>	
Check Rails	5,971	0	0%	In the minimal traffic scenario the existing maintenance program could manage the volume of broken bolts and checkrails in the Toowoomba range section of the network. The checkrail upgrade program is required solely to account for the 6mpta forecast coal traffic volume.
Rerailing Rosewood to Helidon	8,199	0	0%	The requirement for this activity is driven by the forecast coal traffic volumes. In a minimal service scenario the requirements for rail replacement could be mitigated by further speed limiting and the existing maintenance program.
Relay Oakey to Jondaryan	13,042	0	0%	The requirement for this activity is driven by the forecast coal traffic volumes. In a minimal service scenario the requirements for track replacement could be mitigated by further speed limiting and the existing maintenance program.
Check Rails	9,286	0	0%	In the minimal traffic scenario the existing maintenance program could manage the volume of broken bolts and checkrails in the Toowoomba range section of the network. The checkrail upgrade program is required solely to account for the 6mpta forecast coal traffic volume.
Level Xing Reconditioning	1,600	1,600	100%	
<b>Track Program Total</b>	<b>38,098</b>	<b>1,600</b>	<b>4%</b>	
<b>GRAND TOTAL</b>	<b>122,301</b>	<b>37,552</b>	<b>31%</b>	

## KEY FINDINGS AND RECOMENDATIONS

EIG considers that the QCA cost allocation methodology is deficient because it does not adequately allocate costs and does not take into account the mixed usage and current or historic usage patterns on the West Morton Network system.

Based upon a desktop review of previous analysis and studies, and the information provided EIG considers that Queensland Rail's considered approach to increase the disaggregation of maintenance and capex cost across common, fixed costs to operate coal services and variable components appears to be conceptually sound. In comparison with the QCA simplistic approach of cost categorisation into fixed and variable only, it provides a more appropriate basis to allocate costs as it aligns costs more closely with their drivers and the parties causing such costs to be incurred (impactor pays). Both methodologies require considerable analysis of historic data and engineering considerations to firm up cost splits and minimise ambiguities.

Queensland Rail has undertaken an analysis of its forecast maintenance and asset renewal capex costs for the proposed regulatory period in order to assess the components which fall into each of these three categories.

Queensland Rail has not prepared a separate analysis of operating costs. EIG has subsequently reviewed the spreadsheet summarised in section 5 of this report. Queensland Rail's forward looking costs into common, fixed coal and variable costs is summarised in Table 3<sup>30</sup> with associated comments provided in Table 1 and 2.

The analysis has determined from the categorised split costs the totals common cost, coal fixed and variables reflected in Tables 3 below. These costs have been allocated based upon theoretical and professional opinion stated in this report combined with the empirical assessment of relevant and historic information provided and proposed forecast maintenance costs. Variables have been allocated on a top down and empirically assessed rational. As can be noted these align with the resultant costs calculated using a bottom up approach by Queensland Rail<sup>30</sup>. As noted previously throughout this report, although these calculations endorse the soundness of the concept, further empirical and statistical analysis should be carried out to define and validate final values.

*Table 3 EIG estimated categorisation splits based on Queensland Rail's forecast maintenance costs (provided)*

	FY16	FY17	FY18	FY19	FY20	TOTAL 5YRS	AVERAGE
Total FY	\$39,523	\$20,708	\$26,340	\$19,756	\$21,970	\$128,297	\$25,659
Common Cost	\$22,673	\$11,880	\$15,111	\$11,334	\$12,604	\$73,601	\$14,720
Coal Fixed	\$8,537	\$4,473	\$5,689	\$4,267	\$4,746	\$27,712	\$5,542
Variable	\$8,313	\$4,355	\$5,540	\$4,155	\$4,621	\$26,984	\$5,397

<sup>30</sup> Refer to Queensland Rail's paper on 'West Moreton Network - Common, Fixed and Variable Maintenance and Renewal Costs' for detailed explanation

However, we note that reaching agreement about the allocation of cost items across each category – be it fixed costs common to the network, fixed costs required to operate coal services or variable costs, does provide a challenge which will need further engineering analysis and economic consideration. Experience from other sectors shows that this approach takes considerable time and cost investment to achieve the desired degree of precision and robustness so that the framework supports both current and future decision-making processes.

## Attachment 4: Post 1995 Capital for Inclusion in the West Moreton RAB

Asset ID	Asset Class	Asset Description	Location Code	km	Location	Acquisition Date
212433	Signal mechanic	MECHANICAL POINTS COTTON CONTAINER TERM	LS463	WL0085.000	DALBYX - TYCANBAX	01.04.1997
225941	Fence	FENCE SECURITY HIGH RISK AREA TRACK SIDE	LS889	ML0069.060	ROSEWOOD - HELIDON	30.04.1998
225943	Fence	FENCE SECURITY HIGH RISK AREA TRACK SIDE	LS889	ML0114.520	ROSEWOOD - HELIDON	30.04.1998
234095	Fence	FENCE INFRASTRUCTURE INVENTORY DEPOT	18163		HARLAXTON	30.06.1999
234107	Fence	FENCE INFRASTRUCTURE INVENTORY DEPOT	27238		CHINCHILLA	30.06.1999
234093	Hard stand	HARDSTAND INFRASTRUCTURE INVENTORY DEPOT	17961		HOLMES	30.06.1999
234094	Hard stand	HARDSTAND INFRASTRUCTURE INVENTORY DEPOT	18163		HARLAXTON	30.06.1999
234106	Hard stand	HARDSTAND INFRASTRUCTURE INVENTORY DEPOT	27238		CHINCHILLA	30.06.1999
237694	Fence	FENCE INFRA INVENTORY DEPOT COMPOUND	27473		MILES	01.01.2000
247370	Custom prem eqp	RADIO TCR BASE MILES	27473		MILES	31.01.2000
237687	Lx protection	PEDESTRIAN CROSSING AND MAZE	LS889	ML0081.520	ROSEWOOD - HELIDON	28.03.2000
246856	Lx protection	ACTIVE LEVEL CROSSING PROTECTION	LS889	ML0059.760	ROSEWOOD - HELIDON	01.07.2001
246822	Train protect	DTC TRAIN PROTECTION SW & WESTERN QLD BRANCH LINES	SC013		WESTERN	15.07.2001
252317	Rway track lt	RAILWAY TRACK PART WORN TYPE 4	LS356	WL0163.670 - WL0164.271	MACALISTER COAL SIDINGX - CHINCHILLA	28.02.2002
251306	Fence	FENCE	17961		HOLMES	29.05.2003
252326	Telephone eqp	PABX TEL DALBY	24838		DALBY	13.05.2003
252327	Telephone eqp	PABX TEL CHINCHILLA	LS356		MACALISTER COAL SIDINGX - CHINCHILLA	14.05.2003
315333	Sig ilock mech	SIGNAL INTERLOCKING MECHANICAL	LS546	ML0131.230	HELIDONX - TOOWOOMBAX	31.10.2003

Asset ID	Asset Class	Asset Description	Location Code	km	Location	Acquisition Date
300116	Link/netwk eqp	SYS MSR PABX # 828 439	SC013		WESTERN	30.11.2003
301030	Data network	EQPT DATA NET LAN / WAN EQUIPMENT DALBY	24838		DALBY	01.07.2004
301031	Data network	EQPT DATA NET LAN / WAN EQUIPMENT CHINCHILLA	LS356		MACALISTER COAL SIDINGX – CHINCHILLA	01.07.2004
300737	Link/netwk eqp	SYS DMR TOOWOOMBA TO ROMA	SC013		WESTERN	01.07.2004
309349	Lx protection	PEDESTRIAN CROSSING & MAZES CW ALARMS	LS889	ML0087.490	ROSEWOOD - HELIDON	12.07.2005
309351	Lx protection	PEDESTRIAN CROSSING & MAZES CW ALARMS ID NO. 4234	LS889	ML0096.120	ROSEWOOD - HELIDON	16.10.2005
327896	Trk tnout md/lt	AUSTROLL SWITCH ROLLERS - 1 SET	LS711	WL0011.640	TOOWOOMBAX - OAKEY	31.05.2007
328069	Stl pipeculv md	CULVERT STEEL PIPE	LS353	WL0018.425	OAKEY - JONDARYN COAL SIDING	30.09.2009
401339	Conc rlbrdg md	CONCRETE RAIL BRIDGE	LS546	ML0135.490	HELIDONX - TOOWOOMBAX	16.04.2011
405169	Data network	1X 3750X SWITCH	27238		CHINCHILLA	12.03.2012
405169	Data network	CAPITALISED INTEREST 1X 3750X SWITCH	27238		CHINCHILLA	12.03.2012
405172	Data network	1X 3750X SWITCH	24838		DALBY	12.03.2012
405172	Data network	CAPITALISED INTEREST 1X 3750X SWITCH	24838		DALBY	12.03.2012
405212	Data network	1X 3750X SWITCH	23210		WILLOWBURN	12.03.2012
405212	Data network	CAPITALISED INTEREST 1X 3750X SWITCH	23210		WILLOWBURN	12.03.2012
405249	Data network	1 X 2951ROUTER	27238		CHINCHILLA	12.03.2012
405249	Data network	CAPITALISED INTEREST 1 X 2951ROUTER	27238		CHINCHILLA	12.03.2012
405252	Data network	1 X 2951ROUTER	24838		DALBY	12.03.2012
405252	Data network	CAPITALISED INTEREST 1 X 2951ROUTER	24838		DALBY	12.03.2012
405282	Data network	1 X 2951ROUTER	23210		WILLOWBURN	12.03.2012
405282	Data network	CAPITALISED INTEREST 1 X 2951ROUTER	23210		WILLOWBURN	12.03.2012
406161	Train protect	DTC TRAIN PROTECTION	LS354	WL0045.808 - WL0047.912	JONDARYN COAL SIDINGX - DALBY	27.05.2013
162382	Lx protection	PEDESTRIAN CROSSING AND MAZE ID 1007	LS546	ML0146.210	HELIDONX - TOOWOOMBAX	28.02.2015
408415	Con culvpipe lt	CULVERTS CONCRETE BOX CULVERT	LS354	WL0055.270	JONDARYN COAL SIDINGX - DALBY	21.04.2015

Asset ID	Asset Class	Asset Description	Location Code	km	Location	Acquisition Date
408416	Con culvpipe lt	CULVERTS CONCRETE BOX CULVERT	LS354	WL0055.280	JONDARYN COAL SIDINGX - DALBY	21.04.2015
408417	Con culvpipe lt	CULVERTS CONCRETE BOX CULVERT	LS354	WL0056.180	JONDARYN COAL SIDINGX - DALBY	21.04.2015
408419	Fld eqp & cable	AXLE COUNTERS	LS889	ML0087.660 - ML0096.410	ROSEWOOD - HELIDON	30.04.2015
408420	Fld eqp & cable	AXLE COUNTERS	LS889	ML0087.660 - ML0096.410	ROSEWOOD - HELIDON	30.04.2015
408421	Fld eqp & cable	AXLE COUNTERS	LS889	ML0096.410 - ML0105.890	ROSEWOOD - HELIDON	30.04.2015
408422	Fld eqp & cable	AXLE COUNTERS	LS889	ML0096.410 - ML0105.890	ROSEWOOD - HELIDON	30.04.2015
408423	Fld eqp & cable	AXLE COUNTERS	LS889	ML0105.890 - ML0114.520	ROSEWOOD - HELIDON	30.04.2015
408424	Fld eqp & cable	AXLE COUNTERS	LS889	ML0105.890 - ML0114.520	ROSEWOOD - HELIDON	30.04.2015
408594	Surveillance eq	CCTV SURVIELLANCE JONDARYAN	LS354	WL0042.850	JONDARYN COAL SIDINGX - DALBY	31.05.2015
408595	Surveillance eq	CCTV SURVIELLANCE JONDARYAN	LS354	WL0042.850	JONDARYN COAL SIDINGX - DALBY	31.05.2015
408596	Surveillance eq	CCTV SURVIELLANCE JONDARYAN	LS354	WL0043.875	JONDARYN COAL SIDINGX - DALBY	31.05.2015
408597	Surveillance eq	CCTV SURVIELLANCE JONDARYAN	LS354	WL0043.875	JONDARYN COAL SIDINGX - DALBY	31.05.2015

## **Attachment 5: Other issues**



**Queensland Rail comments relating to some issues raised by New Hope concerning the SAA**

SAA Clause	Queensland Rail Comment
2.1 and 3.2(b)	<p>The declared service is, at its core, “the use of rail transport infrastructure for providing transportation by rail”. This does not extend to the ancillary services proposed by New Hope. Ancillary services should attract a separate charge as the use can affect the efficiency of the Network, and is additional to and not required for the use of the infrastructure for rail transport from origin/destination.</p> <p>Examples include –</p> <ul style="list-style-type: none"> <li>• A locomotive moved from Acacia Ridge to Fisherman Islands on Friday and stowed in a running road for the weekend with a return service on Monday</li> <li>• Locomotive movements to run around trains due to there being no balloon loops at Jondaryan Bad order wagons being detached and stowed on the Network.</li> <li>• Poor planning resulting in the need to shunt wagons between Toowoomba and Fisherman Islands.</li> <li>• Refueling of locomotives at Whyte Island.</li> <li>• Crew changes and rollingstock examination occurring at Fisherman Islands.</li> </ul>
2.2	<p>As previously submitted, the proposal for exercise of access rights and operator nomination does not work, because the agreement as drafted by the QCA is not capable of creating a legally effective contract.</p>
3.1	<p>Changes to the Train Service Description should be the subject of a new application for access. An access agreement should not operate to give an access holder an automatic right to operate additional Train Services to that originally contracted, or to avoid the payment of Relinquishment Fees. The amendment proposed by New Hope would remove any disincentive to ‘hoarding’ of Access Rights.</p>
4.5	<p>The amendment proposed by New Hope is unnecessary and ineffective – the SAA as proposed by the QCA will not allow the appointment of two operators under the one agreement.</p>
4.7(b)	<p>Schedules are not the place for warranties to be inserted. It is appropriate for parties to warranty the correctness and completeness of all information related to the agreement and Train Services.</p>
6.7	<p>Performance Levels cannot sensibly, and should not, be determined by a third party. As accredited Rail Infrastructure Manager, Queensland Rail cannot be subject to decisions by a third party which will impact on safety and Network operations.</p>
7.1(d)	<p>The amendment proposed by New Hope is unnecessary and inappropriate. The clause makes Queensland Rail responsible for control of activities on the Network. Relationships with third parties engaged by Queensland Rail is a matter for Queensland Rail, not to be policed by access holders.</p>
7.2(d)	<p>Queensland Rail is not in a position to comply with the clause proposed by New Hope. Compliance with safety standards on adjoining networks are a matter for the Operator concerned.</p>

<b>SAA Clause</b>	<b>Queensland Rail Comment</b>
8.7	New Hope proposes the addition of the words 'acting reasonably' to Queensland Rail's requirement that the Operator's software and hardware provide an effective interface between information systems. The operation of effective interface between communication systems is critical to Network safety. This requirement should not be subject to a reasonableness test or dispute.
8.8	The amendments proposed by New Hope are based on a misunderstanding of the data being collected. The clause relates to rollingstock data which can only be provided by Queensland Rail. Data collected in accordance with this clause is not to record network inefficiencies.
8.9	See comments in relation to clause 8.7.
8.11	The new subclause proposed by New Hope is based on a misunderstanding of the effect of clause 8.11 and the term "Network". The clause would require Queensland Rail to notify the Operator and access holder of damage across the entirety of the Network of which Queensland Rail is rail infrastructure manager, which is obviously unnecessary and in many cases irrelevant to the Operator/access holder's use of the Network between a specified Origin/Destination.
9.4	Arrangements for assessment by the access holder of the Operator's compliance with the IRMP should be dealt with in the rail haulage agreement between the parties.
10.1(d)(iii)	See comments in relation to clause 8.7.
10	Queensland Rail should not be responsible or liable for any failures in the Operator's Emergency Management Plan. Queensland Rail makes Operators aware of operational requirements – it is a matter for Operators to ensure they have in place appropriate systems and procedures.
10.2(b)	Queensland Rail may of necessity cause an Obstruction during normal maintenance and operational activities.
10.2(b)	New Hope proposes deleting the clause stating that a failure by Queensland Rail to consult with the Operator does not affect the validity of anything done by Queensland Rail under clause 10.2(c). It may be necessary for Queensland Rail to take steps to clear the Network within a timeframe that does not permit full consultation.
13.5(vii) Footnote 2	New Hope's comment is based on an incorrect reading of the third dot point, which it proposes to delete. The dot point requires a "material" interference with normal business operations. This is not a mere 'inconvenience'. Disruptions to business operations resulting in delays to Train Movements can be significant, and Queensland Rail should not be exposed for taking appropriate steps to mitigate material disruptions.
14.1(a)(3)	See comments in relation to clause 8.7.
15.10(a)	There is no reason an Operator should not be required to remove any substance or thing brought onto the Network.

<b>SAA Clause</b>	<b>Queensland Rail Comment</b>
17.3	An access holder or Operator should not be entitled to request a review of Security more than once in any 12 month period.
18.2(c)	The proposed clause is intended to ensure that Queensland Rail is kept whole during the term of the agreement, and does not incur additional unexpected costs in complying. It should not provide for a windfall to access holders.
19.4(a)	<p>New Hope's proposed amendment permits an access holder, which is not an Operator, to refer disputes to the Rail Safety Regulator. Rail safety matters, and any referral to the Rail Safety Regulator, should be a matter for the Operator and Queensland Rail, which are accredited Rail Transport Operators under the <i>Transport (Rail Safety) Act 2010</i> (Qld).</p> <p>This amendment, and others proposed by New Hope, undermine the purpose of an agreement permitting an end user to be an access holder, without assuming liability for operational issues.</p>
21.2(g)	The SAA already provides for the opportunity to enter into a replacement access agreement (see clause 21.3). The effect of the new subclause proposed by New Hope appears to be intended to leave the question of possible rebate of a Relinquishment Fee open indefinitely. This creates significant ongoing uncertainty for Queensland Rail, and could result in claims for rebates years after the Relinquishment Fee was paid. In those circumstances the Relinquishment Fee is not a "windfall" to Queensland Rail, which has not had the benefit of Access Charges for the relinquished services in the intervening period. New Hope's proposal attempts to remove all risk for the access holder in not properly planning its operations.
22.1(a)	<p>New Hope does not explain how its proposed amendment to prevent partial assignment protects its risk profile.</p> <p>It is also unworkable, as it attempts unsuccessfully to fetter or avoid the exercise of legislative power by the Queensland Government and seeks to deny Queensland Rail the right to assign or otherwise dispose of its rights and interests.</p>
Definition of Change in Law	The fact that Queensland Rail has an opportunity to make submissions on changes to the Access Undertaking does not mean that a change to the Access Undertaking should not be included as a Change in Law. Queensland Rail and other stakeholders may have an opportunity to comment on or make submissions in relation to a number of the items included in the definition. The ultimate change is still a matter beyond Queensland Rail's control. The Access Undertaking is no different.
Definition of Dangerous Goods	New Hope has advanced no reason for the proposed deletion. It should be open to the parties to agree the treatment of goods to be carried.
Definition of Emergency	New Hope advances no evidence for its concern that severe speed restrictions may be imposed so as to circumvent the protections under the NMP. Speed restrictions may be required for safety reasons in the case of an emergency.

<b>SAA Clause</b>	<b>Queensland Rail Comment</b>
Possession	
Schedule 2 – Storage	The words proposed by New Hope to be deleted provide for the level of storage required to operate train services. See Queensland Rail's comments above in relation to ancillary services.
Schedule 3	Take or Pay is not a “windfall” to Queensland Rail. Queensland Rail plans for maintenance in each 12 month period, on the assumption that the Operator will operate 100% of contracted services. This is obviously necessary for safety and operational reasons. Maintenance costs are therefore fixed in each 12 month period. Failure to recover 100% of those costs jeopardises the performance of appropriate maintenance.