March 2014

Aurizon Network - 2010 Access Undertaking

Supplementary Report to the QCA - Maintenance Cost Index

Contents

1. Executive Summary

The Maintenance Cost Index (MCI) is a macro-level index comprised of a basket of goods that aims to more accurately reflect that costs incurred by Aurizon Network in maintaining the Central Queensland Coal Network (CQCN). Whilst the Queensland Competition Authority (QCA) supports the development and application of an industry-specific MCI, a key regulatory requirement for continuance of the MCI in the period of Aurizon Network's proposed 2013 Access Undertaking (UT4) was for Aurizon Network to prepare a review of the performance of the MCI by tracking how the MCI compared relative to changes in actual costs.

Subsequent to a separate review completed during September 2012, discussions with the QCA have indicated that additional analysis should be provided to assist with the QCA's consideration of Aurizon Network's proposed MCI for UT4. As was the case for UT3, the UT4 MCI is based upon independent economic forecasts prepared by BIS Shrapnel for various and relevant component indices. On behalf of the QCA, the MCI had been reviewed by Sinclair Knight Merz (SKM), with a draft report subsequently provided to Aurizon Network.

In view of the above, Aurizon Network prepared this supplementary report to the QCA providing the following:

- Additional information and commentary associated with the movement of the UT3 MCI against movements in actual maintenance costs across the CQCN;
- Further comments on the development of Aurizon Network's UT4 MCI; and
- Comments on the draft report prepared by SKM, where in principle, Aurizon Network accepts the conclusions of the SKM report other than commentary in relation to a labour cost index. Nevertheless, Aurizon Network is pleased to discuss the development of an appropriate labour cost index with the QCA.

However due to the nature, structure and cost capture methodology employed within Aurizon Network's accounting systems, it has been difficult to conduct both a detailed ex-post assessment of the performance of the MCI indices against actual item costs, as well as the weightings of indices against the relevant cost components. This is partly attributed to the fact that the Aurizon Network accounting systems have not been designed to account for tracking items against the MCI, further compounded by the fact that a number of indices are no longer published by the ABS and that as a result, proxies have had to be substituted.

High-level analysis suggests that costs have escalated at a higher level than indicated by the indices, with weightings broadly consistent with actual costs over the UT3 period (other than for the Assets cost component). Overall, Aurizon Network does not appear to have been properly compensated for escalation experienced within unit costs. Nonetheless on the basis that the evidence is limited, no adjustment is being sought for UT4 period (i.e. to the extent there is any loss it is to be borne by Aurizon Network rather than passed through to Access Holders).

Aurizon Network notes SKM's in-principle support for the UT4 MCI methodology including the indices and weightings which are broadly aligned with UT3. Aurizon Network endorses SKM's recommendations subject to a selected number of issues which are discussed further in this report and which Aurizon Network is pleased to discuss with the QCA. Finally, whilst assessment of the UT4 weightings is considered thorough, selection of the indices subject to escalation warrants further consideration.

2. Introduction

Aurizon Network's 2010 Access Undertaking (2010AU) was approved by the Queensland Competition Authority (QCA) on 1 October 2010.

Based upon a number of 'building block' parameters, the pricing arrangements contained within Schedule F of the 2010AU were for the period of 1 July 2009 to 30 June 2013. One of these fundamental 'building block' elements is maintenance – the effort required to ensure that the Central Queensland Coal Network (CQCN) remains a highly reliable, world class rail network – with a key input into the maintenance parameter referred to as the Maintenance Cost Index (MCI).

As referred to in the 2013DAU, the MCI:

> *…aims to provide a more relevant forecast maintenance cost escalation measure than the standard Consumer Price Index (CPI). Hence similar to the CPI, the MCI is a macro-level index comprised of a 'basket' of services that more accurately reflect the costs incurred by Aurizon Network in performance of its maintenance responsibilities and requirements across the Central Queensland Coal Network. Consisting of five cost categories or drivers, each cost driver is weighted based upon a detailed cost assessment from cost data prepared by Aurizon Network.*[1]

A price escalation factor, the primary objective of the MCI is to therefore provide a more robust proxy for changes in maintenance costs than that represented by the CPI as historically, the weighted average basket of goods comprising the CPI has not accurately reflected the key input costs used in the provision of maintenance services across the CQCN.

Whilst the QCA supports the development and application of an industry-specific MCI, a key regulatory requirement for continuance of the MCI in the period of Aurizon Network's proposed 2013 Access Undertaking (UT4) was for Aurizon Network to prepare a review of the performance of the MCI by tracking how the MCI compared relative to changes in actual costs.[2]

Required also by Clause 6.4.4 of the 2010AU, a separate review was completed on 28 September 2012. However, subsequent discussions with the QCA have indicated that additional analysis should be provided to assist with the QCA's consideration of Aurizon Network's proposed MCI for UT4. As was the case for UT3, the UT4 MCI is based upon independent economic forecasts prepared by BIS Shrapnel for various and relevant component indices. On behalf of the QCA, the MCI had been reviewed by Sinclair Knight Merz (SKM), with a draft report subsequently provided to Aurizon Network.

Aurizon Network confirms that it has had some challenges with respect to the assessment of the performance of the UT3 MCI, particularly due to the fact that Aurizon Network's reporting systems are aligned by product (service) rather than function (such as labour). As such, only selected evidence as to the performance of both the forecast weightings and indices against actuals can be presented. In this regard, Aurizon Network notes SKM's in-principle support for the MCI methodology and endorses SKM's recommendations subject to a selected number of issues which are discussed further in this report.

[1] Aurizon Network, 2013, *Volume 4: Maintenance,* 30 April 2013, pg. 120, available at www.qca.org.au
[2] QCA, 2009, *Draft Decision: QR Network 2009 Draft Access Undertaking 2009*, December 2009, available at www.qca.org.au

In view of the above, Aurizon Network has prepared this supplementary report to the QCA providing the following:

- Additional information and commentary associated with the movement of the UT3 MCI against movements in actual maintenance costs across the CQCN;
- Further comments on the development of Aurizon Network's UT4 MCI; and
- Comments on the draft report prepared by SKM, where in principle, Aurizon Network accepts the conclusions of the SKM report other than commentary in relation to a labour cost index. Nevertheless, Aurizon Network is pleased to discuss the development of an appropriate labour cost index with the QCA.

A summary of the current (UT3) and proposed (UT4) MCIs, the latter including both the MCI proposed by Aurizon Network and the MCI recommended by SKM is provided as Attachment A, with detailed information on selected maintenance unit costs provided as Attachment C and D.

This report is presented in a form which facilitates publication by the QCA, expect for Attachment D. The information contained in Attachment D is associated with prices paid to selected suppliers of Aurizon Network and is therefore commercial-in-confidence. Accordingly, Aurizon Network requests that Attachment D not be published.

In this report:

- References to Aurizon Network are to Aurizon Network Pty Ltd, operator of the Central Queensland Coal Network;
- References to UT3 are to the period of the 2010AU;
- References to UT4 are to the period of the 2013AU;
- References to the UT4 submission are to Aurizon Network's submission on the proposed 2013AU submitted to the QCA during April 2013;
- References to years are to the relevant financial year, i.e. 2013 refers to FY2012/13; and
- Defined terms have the meaning given in the 2010AU.

3. UT3 Maintenance Cost Index

3.1 Background

Following a material increase above CPI across various maintenance cost categories prior to the 2010AU, the use of a dedicated MCI was implemented for the UT3 period. For this, Aurizon Network proposed a specific MCI – a composite index comprised of various indices published by the Australian Bureau of Statistics (ABS) – considered at the time to be the closest approximation of Aurizon Network's maintenance cost escalation.

As the development of the UT3 maintenance costs was based on a bottom-up approach, the weightings for the component indexes were obtained from disaggregation of the proposed maintenance allowance into cost classifications (where the same methodology has been applied for UT4).

The use of industry specific indices is not an uncommon approach and is frequently adopted, as shown by the following examples:

- The US Surface Transportation Board maintains a Rail Cost Recovery (RCR) Index and a Rail Cost Adjustment Factor (RCAF),[3,4]
- The Economic Regulatory Authority (ERAWA) typically applies numerous ABS indices in the application of unit rates in floor and ceiling cost model, [5] and
- The Bureau of Infrastructure, Transport and Regional Economics maintains and publishes a road cost index.[6]

The UT3 MCI was based upon independent economic forecasts prepared by BIS Shrapnel for various and relevant component indices.[7] In summary, the relevant components (and associated weightings) were as follows:

- Labour (cost component representing around 44.5% of total maintenance costs);
- Consumables (34.9%);
- Fuel (3.2%);
- Accommodation (1.5%); and
- Assets (15.9%).

Within certain cost components, indices were further allocated between sub-indices. For example, the accommodation index was split equally between Mackay and Fitzroy (Rockhampton).[8]

[3] The "…RCR is a price index that measures changes in the price level of inputs to railroad operations: labour, fuel, materials & supplies, and other operating expenses. The RCR, which has been produced in its current form since 1977, is published quarterly in AAR Railroad Cost Indexes." Further information available at: www.aar.org

[4] The RCAF measures the rate of inflation in railroad inputs and is comprised of five indexes associated with fuel, labour, materials and supplies, equipment rents, depreciation, interest and other expenses. Further information available at: www.aar.org

[5] ERAWA, 2007, *Westnet Rail's Floor and Ceiling Costs Review: Final Determination on the Proposed Floor and Ceiling Costs,* July 2007, available at www.erawa.com.au

[6] The BITRE Road Construction and Maintenance Price Index (RCMPI) is an indicator of the change in input costs faced by the road construction and maintenance industry in Australia. It focuses upon eight major inputs categories including labour, materials, plant hire, depreciation and fuel. Further information available at www.bitre.gov.au

[7] Aurizon Network, 2013, *Annex AF – BIS Shrapnel – Maintenance Cost Escalation Forecasts to 2017 – Draft Report – September 2012,* available at www.qca.org.au

[8] A break-down of the UT3 MCI and the relevant cost components, as well as sources for each index is provided within Attachment A. Aurizon Network confirms that this MCI is not the MCI approved by the QCA for UT3. Aurizon Network

In accordance with Schedule F, the consequential cost difference between the forecast and the actual MCI is deducted (or added) to the System Allowable Revenue (SAR) when undertaking the yearly Revenue Cap Adjustment process.

3.2 Measuring the performance of the MCI

3.2.1 Overview

Aurizon Network's assessment of the performance of the MCI over the UT3 period should be comprised of two components:

1. Performance of the MCI sub-indices against actual (unit) costs; and
2. Performance of cost weightings against actual share of maintenance costs.

Aurizon Network notes that whilst the move from CPI to a weighted MCI has increased the relevance of the escalation process (and is supported for UT4), there have been three key challenges in undertaking this assessment:

1. Identifying and substantiating actual movements in the key maintenance cost inputs. Maintenance costs are a mixture of numerous cost inputs, where for the vast majority, volumes used are not specifically tracked, e.g. spark plugs for on-track machines. For some items, materially correct total usage is available, but not the maintenance share, e.g. ballast and sleepers. Similarly, while the price movement of some items is available, it is not practical to monitor the majority of items used in the CQCN maintenance function;
2. Lack of an index aligned with the hire of plant and equipment category. The hire of plant and equipment has become has a significant component of Network's maintenance costs (expected to be around 15% during UT4); and
3. Fixing of index aligned to assets category. The assets index appears to have been fixed for the UT3 period and is not aligned with any specific index or group of indices. This challenge is further compounded by the fact that no actual UT3 costs have been tracked against this cost component (refer section 3.2.3 below).

With respect to the first challenge and due to the lack of detailed data, the level of detailed analysis undertaken by Aurizon Network has been restricted. Hence Aurizon Network's assessment of the performance of the MCI has been a limited assessment. Aurizon Network recognises that for an accurate MCI to be established for future periods, a more detailed examination of cost behaviour will be required, however this will require significant changes to Aurizon Network's accounting systems.

Nevertheless in the meantime, Aurizon Network must rely on limited observations as the basis for its regulatory proposals for the QCA review (such as by SKM). In this regard, Aurizon Network notes the comments made by SKM in its review of the proposed UT4 MCI, which provides in-principle support for the methodology used to develop the MCI and the process by which relevant indices are selected.[9]

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also notes that the ABS as ceased publication of certain indices. Aurizon Network has (with the QCA's consent via the revenue cap process) supplemented these indices with equivalent indices that continue to be published by the ABS.

[9] SKM, 2014, *Review of Aurizon Network's proposed Maintenance Cost Index for the UT4 period,* January 2014

With respect to the second and third challenges, Aurizon Network believes it has addressed these issues in its revised proposals for UT4 (refer Section 4 below).

3.2.2 Performance of indices

In view of the comments in Section 3.2.1 above, evidence has been gathered for the two main cost categories underlying the MCI, being labour and consumables (collectively around 80% of total maintenance costs).

Labour

Page 8 of Aurizon Network's 2012/13 Revenue Cap Adjustment (RCA) submission to the QCA confirms the actual labour price indices for the UT3 period.[10]

Table 1 - Labour Index (Actuals)

	2008 (base)	2010	2011	2012	2013
As at July	100.0*	118.1	123.3	128.7	137.2
Change (YoY %)		8.7*	4.4	4.4	6.6
Change (% over 4 years)					24.1

*2008 base as at January 2008. 2010 YoY change assumes constant escalation as between the 2009 and 2010 years.

As indicated in earlier commentary, a review of the performance of the labour index has been challenging as labour costs are only reported by product (service) type rather than function. Complicating this matter further, less than half of the total maintenance-related roles were in place for the full, four years of the UT3 period.

Yet despite these difficulties and based upon Aurizon Network's payroll records, analysis of the change in salaries and wages has been performed upon the 142 roles which were in place across the full undertaking period, comprising 45% of the total maintenance workforce.

Table 2 – Labour Wage Movement (Actuals + CPI)

Financial Year	CPI %	Actual labour movement (142 maintenance roles)
2009 (Base)		
2010	3.2	4.5
2011[11]	3.8	38.0
2012	0.9	3.5
2013	2.0	7.0
Total	10.3	53.0

[10] Aurizon Network, 2013, *2012/13 Revenue Adjustments Amounts – Submission to the QCA,* September 2013, available at www.qca.org.au

[11] One contributor to the 2011 cost increase was a significant one-off across-the-board pay increase, associated with the new Enterprise Bargaining Agreement (EBA) with the intention of retain skilled staff in a climate of heavy competition associated with mining boom. The impact of the increase on unit rates would have been somewhat mitigated by the trading of lower overtime for higher salaries.

Table 2 indicates the estimated actual wage movement by combining the movements of these 142 roles with the actual CPI movement - used as a conservative proxy for the balance (i.e. 55%) of the workforce. Even if this conservative methodology is undertaken in substituting CPI escalation for the remainder of the workforce, actual escalation equates to 29.3% between 2009 and 2012.

In other words, analysis suggests that even with a relatively conservative CPI estimate for wage movements for the balance of the workforce, the total change in Aurizon Network's actual labour costs escalated at a greater rate than that reflected within the labour cost index (i.e. 29.3% vs 24.1%). To provide further evidence, a separate analytical perspective was undertaken for a specific group of maintenance employees within a product centre named *Mechanised Plant*. While the size of the group altered with organisational changes over the years of UT3, Aurizon Network notes that the salaries align relatively closely to the above broader results, particularly the significant increase in 2011.

Table 3 – Labour Wage Movement – Ballast Cleaning Operations (Actuals)

	2010	2011	2012	2013
Ordinary Wages ($m)	1.9	1.9	2.2	2.1
Overtime ($m)	0.1	0.7	0.9	0.8
Allowance ($m)	0.4	0.4	0.5	0.4
Total ($m)	2.4	3.0	3.6	3.3
Average FTEs	31	29	33	27
Average cost per FTE ($)	0.077	0.103	0.108	0.121
Change (YoY %)	(4)	34	5	12
Change (% over 4 years)				51

Aurizon Network believes the analysis in Table 3 corroborates the findings in Table 2, where the actual labour cost escalation has been greater than that within the labour cost index (although escalations in unit costs have been mitigated by the trade-offs agreed for the new EBA).

In summary, whilst the actual labour index moved by 24.1%, a conservative estimate of Aurizon Network's labour costs increased by 29.3%, which was further supported by analysis performed upon the Mechanised Plant group, where wages increased by 51%.

Consumables

Aurizon Network's 2012/13 RCA submission also confirmed the actual consumables price indices for the UT3 period. This is replicated in Table 4 below.

Table 4 - Consumables Index (Actuals)

	2008 (base)	2010	2011	2012	2013
As at January	100.0	101.8	105.1	104.2	104.3
Change (YoY %)		0.9*	3.2	(0.9)	0.1
Change (% over 4 years*)					3.3

*2008 base as at January 2008. 2010 YoY change assumes constant escalation as between the 2009 and 2010 years.

Even though analysis indicates that the escalation experienced within consumables is significantly below that within labour, Aurizon Network confirms that the costs associated with each index in this grouping are a non-homogenous group of inputs, and that individual prices and volumes used are not tracked. By way of example, consumable maintenance costs include those costs attributable in purchasing ballast (of which vast amounts are used), or the hire of plant and equipment (conversely classified as very minor and/or low value consumable items). Whilst there are indications of the prices paid for plant (keeping in mind that in undertaking maintenance, many different types of plant are utilised), it has not been practical to monitor the prices of the many minor items. In addition, the volume used (or hours hired) for any of these items for maintenance works has/is not tracked. Accordingly, it is not practical to prepare an accurate estimate of the weighted average price movement of all applicable cost inputs. Nevertheless so as to provide some guidance, alternative analysis has been prepared two cost categories within the consumables bucket.

Plant Hire

The unit prices for the most common items of plant hired by the maintenance function have been reviewed, referencing Aurizon Network's two main external service providers for maintenance equipment. When assessing the year-on-year change across the three years from 2011 to 2013, costs indicate an average increase of 7.5% per annum. This is indicated below in Table 5.

Table 5 - Consumables Index (Actuals)

Equipment	Total Change	Annual Change
Excavator	15%	5%
Grader	20%	7%
Loader	21%	7%
Skid Steer Loader	24%	8%
Truck – Tipper	29%	10%
Truck - Water	23%	8%
Average		**7.5%**

More detailed results for the three years between 2011 and 2013 are provided in Attachment D.

Ballast Costs

Similarly, in assessing the year-on-year change of ballast prices across four years from 2010 to 2013, changes in costs indicate an average increase of 4.7% per annum. More detailed results are provided in Attachment D.

3.2.3 Appropriateness of cost category weightings

As maintenance costs are captured and reported by product (service), no standard view of the general ledger/cost category view was available. As a solution and as part of the UT4 cost build-up, Aurizon Network undertook a 'work order' view of actual maintenance costs for the 2012 year. For consistency this year was selected for the UT3 review.[12] Table 6 indicates the weighting of the UT3 MCI cost categories compared to the actual costs incurred throughout 2012.

[12] Aurizon Network notes that the 2012 year may not be representative of the full, four years of UT3.

Table 6 – MCI Cost Category Comparison: UT3 weightings versus FY12 actuals

Cost Category	UT3 weighting %	FY12 actual weighting %
Labour	44.5	51.0
Consumables	34.9	44.0
Fuel	3.2	2.1
Accommodation	1.5	2.9
Assets	15.9	0.0

With the exception of the Assets category in the above table, weightings would appear to seem reasonable, even though consumables and labour are actually heavier in weight than that indicated as per the UT3 weighting. However this is probably a reflection of the lack of costs associated to the Assets cost category. Aurizon Network further notes that it is not been possible to assess the behaviour of maintenance costs elements within each of the index groupings (i.e. for Consumables there are five indices with an equal weighting – 4 lots of 18% + 28% for CPI) and this is because a detailed allocation of the UT3 maintenance cost build-up by individual cost component has not been available.

Further high-level comments on the specific cost components are provided further below.

Labour

For 2012, Aurizon Network has determined that actual labour costs were 51% of total maintenance costs, compared to a UT3 MCI cost category weighting of 44.5%.

In assessing 2012 labour costs, the following factors could have led to the variance against the UT3 weighting:

- Mining Boom: As a result impacts from the recent mining boom, significant salary increases were being paid in 2011. Consequently, this was a factor leading to actual 2012 labour costs being greater than that assumed at the time of doing the UT3 submission. Nonetheless Aurizon Network notes that these increases have moderated and are not expected to be replicated during the UT4 period.

- High staffing levels: Since 2012, Aurizon Holdings has offered a number of voluntary redundancies which have been taken up across the Aurizon Holdings group, including those within Aurizon Network. Whilst there has been some replacement of internal labour with external labour, the 'equivalent' amount of maintenance resource is expected to be lower during UT4 reflecting assumed higher levels of efficiency in maintenance delivery.

In view of the above, Aurizon Network is proposing a weighting of 45% for UT4 which is consistent with the UT3 weighting (refer discussion on the methodology for UT4 in Section 4).

Consumables

For 2012, Aurizon Network has determined that actual consumables costs were 44% of total maintenance compared to a UT3 MCI cost category weighting of 34.9%.

In assessing 2012 consumables costs, Aurizon Network suggests two main reasons for the variance:

- Investment scope: The UT3 maintenance cost submission proposed investment in both plant and equipment, altogether associated with a significant increase in ballast undercutting and resurfacing. These investments did not occur and instead were supplemented by the greater deployment of operational resources in the absence of capital.

- Balancing: During the period in question some 'balancing' costs would have been included within the Assets grouping, even actual costs have also been attributed to the Consumables grouping. However with the analysis undertaken of maintenance costs and with better groupings structured, such allocations should be minimised in the future.

In view of the above, Aurizon Network is proposing a lower weighting of 30% for the UT4 period, broadly consistent with the UT3 weighting.

Fuel

For 2012, actual fuel costs were 2.1% of total maintenance costs, compared to a UT3 MCI cost category weighing of 3.2%. Evidence suggests that the lower actual costs reflect higher amounts of plant hire for which fuel-inclusive rates are paid. Nevertheless, Aurizon Network believes the difference is immaterial and is therefore proposing a weighting of 2% for the UT4 period.

Accommodation

For 2012, actual accommodation costs were 2.9% of total maintenance costs, compared to a UT3 cost category weighting of 1.5%. Aurizon Network believes the difference between these weightings is immaterial and is therefore proposing a weighting of 2% for the UT4 period.

Assets

For 2012, actual assets costs were 0% of total maintenance costs, compared to a UT3 cost category weighting of 15.9%. Aurizon Network has discussed the reasons for the variance above and is not proposing a weighting for the Assets cost category during UT4.

Rather a 'balance of costs' weighting of 20% is proposed, which is broadly consistent with the UT3 weighting for Assets. These costs include asset-related charges and residual costs which have been excluded from the UT4 weighting for Consumables.

3.2.4 Conclusions

Due to the nature, structure and cost capture methodology employed within Aurizon Network's accounting systems, it has been difficult to conduct both a detailed ex-post assessment of the performance of the MCI indices against actual item costs, as well as the weightings of indices against the relevant cost components. This is partly attributed to the fact that the Aurizon Network accounting systems have not been designed to account for tracking items against the MCI, further compounded by the fact that a number of indices are no longer published by the ABS and that as a result, proxies have had to be substituted.

High-level analysis suggests that costs have escalated at a higher level than indicated by the indices, with weightings broadly consistent with actual costs over the UT3 period (other than for the Assets cost component). Overall, Aurizon Network does not appear to have been properly compensated for escalation experienced within unit costs. Nonetheless on the basis that the evidence is limited, no adjustment is being sought for UT4 period (i.e. to the extent there is any loss it is to be borne by Aurizon Network rather than passed through to Access Holders).

Aurizon Network notes SKM's in-principle support for the UT4 MCI methodology including the indices and weightings which are broadly aligned with UT3. Aurizon Network endorses SKM's recommendations subject to a selected number of issues which are discussed further in this report and which Aurizon Network is pleased to discuss with the QCA. Finally, whilst assessment of the UT4 weightings is considered thorough, selection of the indices subject to escalation warrants further consideration.

4. UT4 Maintenance Cost Index

4.1 Changes to the UT3 approach for UT4

Following a detailed review of the make-up of the UT4 maintenance cost base, minor changes were made to the structure of the MCI so as to better alignment the index against the proposed maintenance costs. This included:

- Restructure of the Labour cost category: Rather than using a mix of indices as undertaken during the UT3 period (i.e. Queensland All Industries, Mining: Private and Public, All occupations; Construction: Private, All occupations), the UT4 MCI proposes to reference the Average Weekly Ordinary Time Earnings (AWOTE) index for Mining Australia. The rationale for moving to a single index was that during the UT3 period, Aurizon Network competed directly with the mining industry for the vast majority of its maintenance labour services and resources; and
- The introduction of the Hire of Heavy Plant & Equipment index: As per earlier comments, this cost category averages 15% of the total cost base across the UT4 years.

4.2 Key issues

The ultimate aim of the MCI is to most accurately reflect the indexation of maintenance costs that Aurizon Network is exposed to over the period of an undertaking. However, it is important to highlight that no forecast estimate will 100% align with the actual changes in costs which are incurred in maintaining the CQCN. Given this difficulty and the challenges faced historically, Aurizon Network believes the most effective and efficient solution in defining and assessing an MCI should contain factors that revolve around three key elements, including:

1. The materiality of the cost category;
2. The work involved in substantiating the actual costs incurred (including that there is a sufficient data available so as not to distort any results); and
3. The likelihood of the change in Aurizon's actual cost being materially different from the movement in the index.[13]

In this light, Aurizon Network believes the table located overleaf outlines an approach that may practically meet the objective of reporting against the MCI framework going forward.

[13] Aurizon Network believes the likelihood of such an event materialising diminished. Specifically, in a move to improve the way Aurizon Network classifies its costs, the forecasts for the UT4 period are based upon a four year detailed Profit & Loss Statement, with each of the 162 relevant General Ledger (GL) accounts of the maintenance cost base assigned to a MCI cost category.

Table 7 – UT4 MCI Cost Categories (Issue/Solution Matrix)

Cost Category	Labour (UT4 – 45%)
Issue	As indicated in Section 3.2, maintenance labour costs have historically been very difficult to quantify, complicated further due to a myriad of roles not individually identified.
Suggested Approach	A suggested solution is to apply the annual Enterprise Bargaining Agreement (EBA) increases to the labour-related GL accounts, thereby eliminating concerns regarding who and how much maintenance effort is undertaken. However, this approach would assume that: 1. Contract level employees are paid the equally and/or receive similar increases; and 2. The price for outsourced roles move in line with the Aurizon Network EBAs.
Cost Category	Plant Hire (UT4 – 15%)
Issue	Costs relates to numerous categories of different machine types, culminating into a challenging task when attempting to identify the "average" move in costs. For instance, prices have increased for front-end loaders by 10%, whereas for bobcats, decreased by 5%. Additionally challenges are encountered when the length of time, i.e., the total days, for each hire is unknown.
Suggested Approach	A suggested solution to this issue is to use a selected sample of main suppliers for the most voluminous hire items, then giving a weighting to each hire category ultimately calculating an average change in costs.
Cost Category	Track Components (UT4 – 11%)
Issue	Ballast, rail and sleepers account for the bulk of these costs. Yet as per plant hire, a challenging task exists when attempting to identify the "average" move in costs on a unit basis.
Suggested Approach	A suggested solution to this issue is to use a selected sample of main suppliers for the most voluminous items, then giving a weighting to each item category ultimately calculating an average change in costs.
Cost Category	Machine Components (UT4 – 6%)
Issue	A combination of a large number of items, ranging from the inexpensive to the more expensive, again presenting a challenging task when attempting to identify the "average" move in costs.
Suggested Approach	Accept the actual movement in the relevant index.
Cost Category	Accommodation (UT4 – 2%)
Issue	Limited issue and should be able to obtain data from contracted suppliers.
Suggested Approach	Use selected sample of significant contracts and accept weighted average in actual movement of the indices.
Cost Category	Fuel (UT4 – 2%)
Issue	Limited issue and should be able to obtain data from contracted suppliers.
Suggested Approach	Use actual costs of significant contracts and accept weighted average in actual movement of the indices.
Cost Category	Other (UT4 – 10%)
Issue	N/A
Suggested Approach	Accept the actual movement in the relevant index.

5. Comments on draft SKM Report

During January 2014 and in response to being requested to undertake a review of the reasonableness of the proposed MCI for the UT4 period, SKM issued its draft report with a copy also provided to Aurizon Network. In principle, Aurizon Network supports the key conclusions associated with the draft report other than those relating to the labour cost index. A detailed review and response to the draft report is provided below, with commentary only provided for those sections for which Aurizon Network has a definitive view.

5.1 Introduction

5.1.1 Background to this report and task description

SKM states that the QCA has asked it to assume the working capital allowance is excluded from the maintenance cost base.[14]

Aurizon Network rejects the QCA's suggestion that working capital should be excluded from the maintenance allowance and will hold separate discussions with the QCA on this matter.

5.1.2 Accuracy of data provided

Aurizon Network confirms the statements made by SKM in this section, and that the MCI weightings in the updated forecast remain current. The difference between the updated MCI forecast, based on the revised weightings and the UT4 MCI forecast is not material (a variance of 0.5%).[15]

5.2 Review of the BIS Shrapnel Forecast

5.2.1 Review of forecast indices

SKM has expressed general concerns regarding the verification of the indices in the approach proposed by BIS Shrapnel, and in particular the AWOTE index, the wage price index for mining and construction industries in Queensland, the hire of heavy plant and equipment index, and the fabricated metal price index. SKM has also had difficulty reconciling a number of publicly available (ABS) indices contained in the BIS Shrapnel report.[16]

Aurizon Network has reviewed these comments and has elected not to refer them back to BIS Shrapnel for follow-up. In this regard:

- Aurizon Network supports the selection of indices which can be verified by an independent, trustworthy source. In this regard, Aurizon Network contacted the ABS which has indicated it is prepared to supply suitable indices under a 'fee for service' arrangement. Aurizon Network is pleased to discuss such an arrangement with the QCA before formally approaching the ABS.

[14] SKM, 2014, pg. 1
[15] SKM, 2014, pg. 2
[16] SKM, 2014, pg. 4

- Variances against the relevant forecast indices are assessed by Aurizon Network in accordance with the Revenue Cap Adjustment (RCA) process described within Schedule F of both the 2010AU and the proposed 2013AU, with RCA submissions subject to approval by the QCA.

In view of the above, Aurizon Network does believe that the comments made by SKM will have a material impact on the QCA's decision on the UT4 MCI.

5.2.2 Accuracy of the BIS Shrapnel forecast

SKM has provided information on the extent to which the forecast indices prepared by BIS Shrapnel have varied from the actual data observed.[17]

Aurizon Network notes these comments and agrees with SKM that any variations between forecast and actual could be addressed in the MCI adjustments via the RCA process. In actuality this has occurred previously, however Aurizon Network could adjust the maintenance cost escalation to reflect indices *both* at 30 June 2013 and 30 June 2014 (the latter given that the QCA's Final Decision on UT4 is not expected until November 2014). Aurizon Network is pleased to discuss a preferred approach with the QCA.

5.3 Review of Aurizon Network's approach for determining the MCI for the UT4 period

SKM has raised two issues with respect to the weighted cost composition (weightings) submitted by Aurizon Network during the UT4 period:

- Firstly, if the cost composition alters Aurizon Network may earn a profit merely from changes in the cost composition; and
- Secondly, that the cost composition alters and therefore does not serve its intended purpose of safeguarding Aurizon Network from significant price increases.[18]

Aurizon Network confirms that it would possible to adjust the MCI measurement to re-weight the cost compositions on the basis of actual expenses incurred during the year, most likely via the RCA process. However, any benefit associated with an annual adjustment would be immaterial and unlikely, especially given the greater granularity attributable to assigning 162 General Ledger accounts of the maintenance cost base to the MCI. For reference, this is attached within Attachment C.

5.4 Assessment of the reasonableness of the proposed MCI

5.4.1 Working capital

Aurizon Network notes – and agrees with – SKM's comment that the impact of excluding working capital is immaterial.[19]

[17] SKM, 2014, pg. 5
[18] SKM, 2014, pg. 11
[19] SKM, 2014, pg. 12

5.4.2 Reasonableness of assigned indices

Aurizon Network notes – and agrees with – SKM's comments that the proposed approach to assigning forecasts to individual cost categories is a robust and reasonable approach.[20]

Aurizon Network confirms that whilst it does have the flexibility from the BIS Shrapnel report to select both the index used and the weighting within each cost driver, it is only proposed in respect of the initial proposal for UT4 and would not be modified on a periodic basis. Aurizon Network accepts that there is a risk that over the UT4 period, both the choice and weightings will not properly match the true behaviour of costs. However Aurizon Network also believes that any such risk is both immaterial and broadly symmetric (i.e. the analysis in Section 3 indicates that the indices have trailed actual costs such that Aurizon Network has been worse off).

Aurizon Network provides the following comments upon Table 4-2 located within the SKM report regarding the reasonableness of the maintenance cost categories and corresponding indices. A detailed list of the indices and relevant weightings proposed for UT4 – together with SKM's recommended approach and Aurizon Network's summary response – is provided as Appendix A.

Labour (45% of costs)

SKM considers the use of the AWOTE index for mining is not reasonable because:

- The AWOTE is no longer published by the ABS; and
- Aurizon Network does not compete with the mining industry for all types of labour.[21]

Consequently, SKM recommends that for labour the UT3 approach should be readopted, being a balanced composition of general wage price indices published by the ABS, which covers the construction and mining industries across Australia and all industries across Queensland (one-third each, i.e. 33.3%). However Aurizon Network notes that these were not the groupings originally approved for UT3, the construction and mining indices are no longer published for Queensland and in response the national indices were adopted for the revenue cap process.

SKM makes the comment that it "…does not consider that Aurizon Network will compete with the mining industry for all types of labour."[22] Yet SKM fails to provide justification for selection of the construction and the 'all industries' index (SKM was not made aware of the fact that the current indices have changed from those originally approved for UT3). Whilst Aurizon Network agrees that not all of its labour competes directly with mining, given the location of its full-time maintenance staff (being across Central Queensland) there is both direct and indirect competition from the mining industry. For instance, the substantial majority of Aurizon Network's maintenance staff are located within the Central Queensland region. In addition, whilst specialist plant operators are trained specifically for use on track maintenance machines, their qualifications and experience lend themselves to recruitment by mining contractors where directly recruitable resources are not available.

In view of the above, whilst Aurizon Network accepts that a specific mining wages index may not be an accurate reflection of the full composition of Aurizon Network's labour force, it believes the selection of such

[20] SKM, 2014, pg. 12
[21] SKM, 2014, pg. 14
[22] SKM, 2014, pg. 14

an index is more reflective of the composition of its labour costs that the combined approach proposed within the SKM report. Further, Aurizon Network notes the earlier analysis where the actual cost escalation was most likely greater than the grouping of indices for UT3 that SKM has recommended be adopted for UT4.

Accordingly, Aurizon Network proposes the following alternatives to SKM's recommendation:

- That the ABS is commissioned to prepare a Queensland based 'private' index to replicate the UT3 grouping originally approved; and
- If an ABS private index cannot be prepared, that the AWOTE for mining in Australia be adopted.

Fuel (2% of costs)

SKM rejects the use of the unleaded petrol (retail) index proposed for UT4 on the basis that a considerable proportion of Aurizon Network's fuel requirement is diesel. Nevertheless, Aurizon Network notes the immateriality of this cost component's contribution to the MCI and on this basis, is prepared to accept SKM's proposed index based on a range of retail and wholesale petrol and diesel indices (one-fifth each).[23]

Accommodation (2% of costs)

Aurizon Network notes that SKM considers the proposed components as appropriate therefore proposing no change to the UT4 application.[24]

Consumables (30% of costs)

SKM rejects the proposed use of a composition of indices comprising the hire of heavy plant, the fabricated metal producer price index (PPI) and transport equipment and parts PPI for UT4. SKM notes that the hire of heavy plant index is not independently verifiable.[25]

As with the labour cost category, Aurizon Network is pleased to work with the QCA and the ABS to determine a private index which can be independently verifiable. However if this is not possible then Aurizon Network is prepared to accept the indices recommended by SKM.

Assets (1% of costs)

Aurizon Network notes that SKM considers the proposed index as reasonable.[26] However given the small allocation in this category and so as to keep the number of groupings to a minimum, for the UT4 application Aurizon Network recommends to move the Assets apportionment of 1% to the accommodation category, better aligning the UT4 forecast to the 2012 actual costs.

Balance of costs (20% of costs)

Aurizon Network notes that SKM has accepted the proposed index, subject to slight variations regarding the indexation of freight charges against the PPI for road freight.[27] However, Aurizon Network concurs with SKM regarding the relative significance of freight charges to total costs.

5.4.3 Reasonableness of a system-wide MCI

SKM conducted analysis of the potential impacts of applying the MCI at a system level, rather than socialised across the four systems of the CQCN (GAPE has been included within Newlands). SKM asserts

[23] SKM, 2014, pg. 14
[24] SKM, 2014, pg. 15
[25] SKM, 2014, pg. 15
[26] SKM, 2014, pg. 15
[27] SKM, 2014, pg. 16

that Blackwater system users would likely pay a greater level of escalation than would be justified relative to the other systems.

Aurizon Network notes that as per the SKM analysis, the amount 'subsidised' by Blackwater users is around $1 million across the UT4 period, an amount which is immaterial when compared against the maximum allowable revenues of even the smallest system. For instance, maximum allowable revenue for Moura is forecasted to equal $232.2 across UT4.[28] Accordingly, Aurizon Network agrees with SKM that use of a system-wide MCI is appropriate and reasonable.

5.4.4 Reasonableness of fixed cost composition (weightings) for the regulatory period

SKM proposes that rather than fixed cost compositions (weights) as applied for UT3, weightings be reset every year as part of the annual revenue cap process.

However, Aurizon Network notes SKM's comment that:

> *…the difference in escalation costs for the UT4 period would potentially only be significant for very low discount rates/required rates of return, which is unlikely. SKM therefore finds that an MCI based on the total cost for the regulatory period is appropriate in the context of the forecast expenditure.*[29]

Further, Aurizon Network also notes that even at the discount rates proposed by Aurizon Network for UT4, the impact is negligible relative to the total allowable revenues for UT4. Accordingly, Aurizon Network continues to propose a fixed cost composition for UT4.

Notwithstanding, on the basis that the revenue cap submission is completed after the end of the relevant financial year, it would be impossible to re-weight the cost compositions as part of the annual process concurrent with the variation between actual and forecast MCI. Lastly, such a change would require amendments to Schedule F of the proposed 2013AU.

[28] Aurizon Network, 2013, *Volume 3 – Maximum Allowable Revenue and Reference Tariffs*, pg. 22, April 2013, available at www.qca.org.au
[29] SKM, 2014, pg. 21

Attachment A – further information

Table 8 - UT3 MCI

Measure [1]		Particulars		Issue
Consumables Index	Non-Building Construction 18%	Name:	Output of the Construction industries, subdivision and class index numbers	Quarterly
		No:	TABLE 17. Road and Bridge Construction Australia	
		Ref:	6427.0	
		Series ID	A2333664R	
	Basic Metal Products 18%	Name	Output of the Manufacturing industries, division, subdivision, group and class index numbers	
		No:	TABLE 12. Primary Metal and Metal Product Production	
		Ref:	6427.0	
		Series ID	A2305757C	
	Transport Equipment & Parts 18%	Name:	Output of the Manufacturing industries, division, subdivision, group and class index numbers	
		No:	TABLE 12. Transport Equipment Manufacturing	
		Ref:	6427.0	
		Series ID	A2305907X	
	Fabric Metal Products 18%	Name:	Output of the Manufacturing industries, division, subdivision, group and class index numbers	
		No:	TABLE 12: Fabricated Metal Product Production	
		Ref:	6427.0	
		Series ID	A2305805K	
	Consumer Price Index 28%	Name	CPI: Groups, Index Numbers by Capital City	Quarterly
		No:	TABLE 5. All groups CPI, Brisbane	
		Ref:	6401.0	
		Series ID	A2325816R	
Labour	Queensland All Industries 33%	Name:	Average Weekly Earnings, Australia	Annually
		No:	TABLE 13C. Average Weekly Earnings, Queensland (Dollars) - Original	
		Ref:	6302.0	
		Series ID	A2719623W	
	Mining; Private and Public; All occupations; 33%	Name:	Average Weekly Earnings, Australia	
		No:	TABLE 10G. Average Weekly Earnings, Industry, Australia	
		Ref:	6302.0	
		Series ID	A2728173T	
	Construction; Private;	Name:	Average Weekly Earnings, Australia	
		No:	TABLE 10G. Average Weekly Earnings, Industry, Australia	

	All occupations; 33%	Ref:	6302.0	
		Series ID	A2734098T	
Accom		Name:	Hotels, Motels and Serviced Apartments by Tourism Region QLD (Mackay and Fitzroy District)	Quarterly
		No:	TABLE 3. Tourist Accommodation, Small Area Data, Queensland	
		Ref:	8635.3.55.001	
		Description	Average takings per room night occupied	
Fuel			AAA Pricing Summary Unleaded Petrol (cents per litre) (Emerald 20%, Gladstone 20% and Mackay 20%)	Quarterly
			AIP Terminal Gate Prices Historical Averages Brisbane, Unleaded (20%) and Diesel (20%)	Daily

(adopted for 2013 revenue cap process, note differs slightly from MCI approved by the QCA for UT3)

Note: the Assets cost component is escalated based on a fixed index, there is no actual index against which variations are measured.

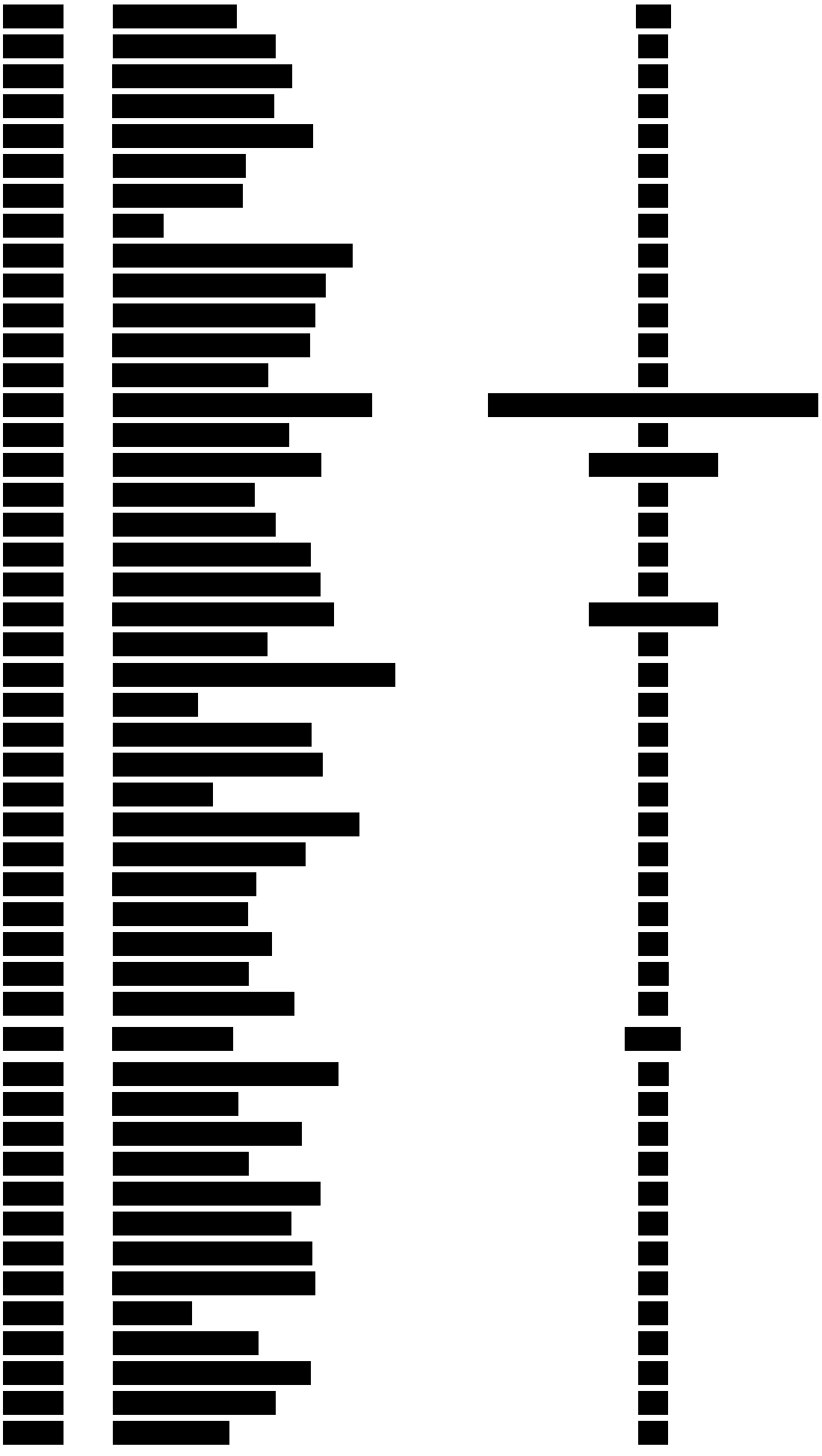
Attachment B – further information (not for publication)

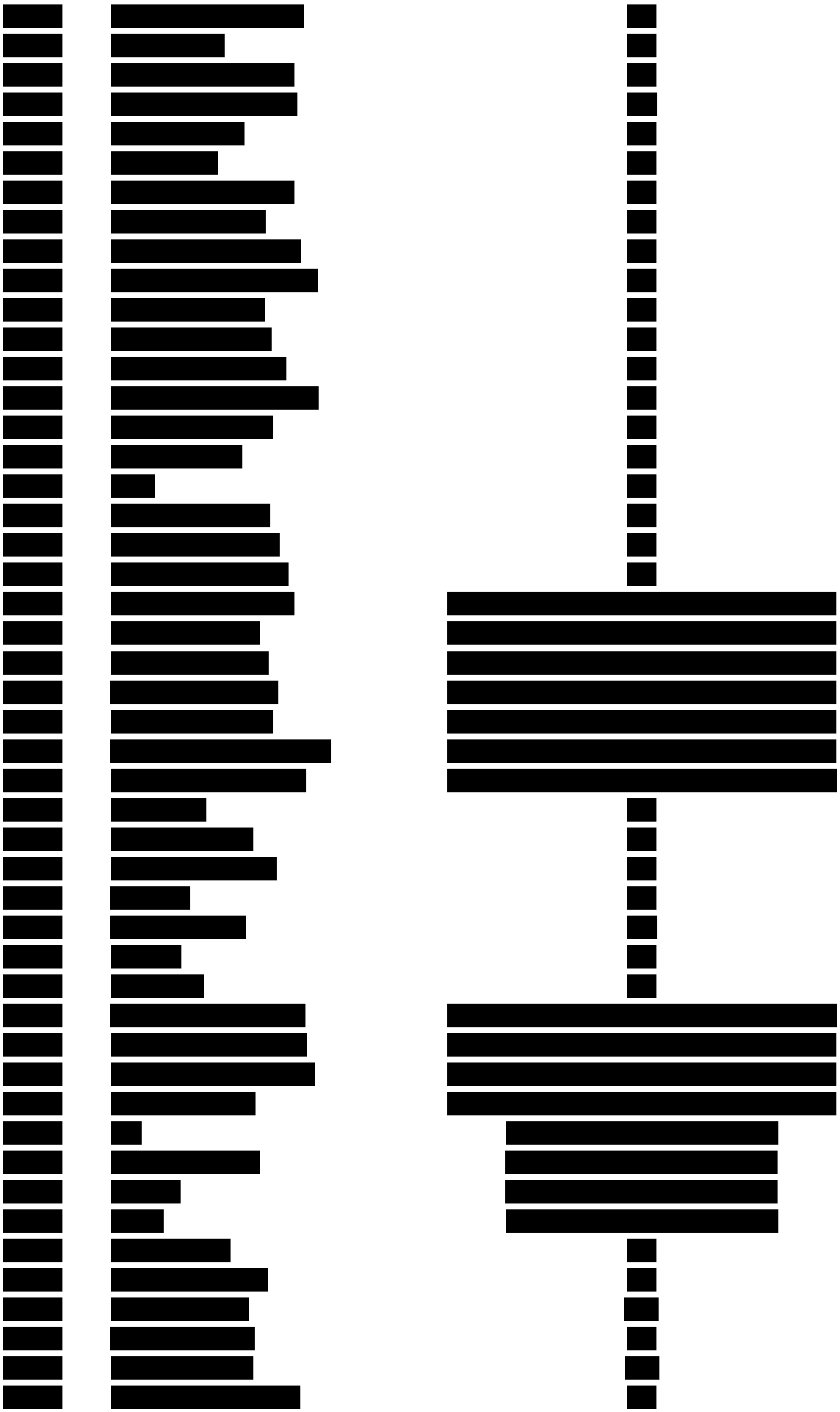
Proposed UT4 MCI

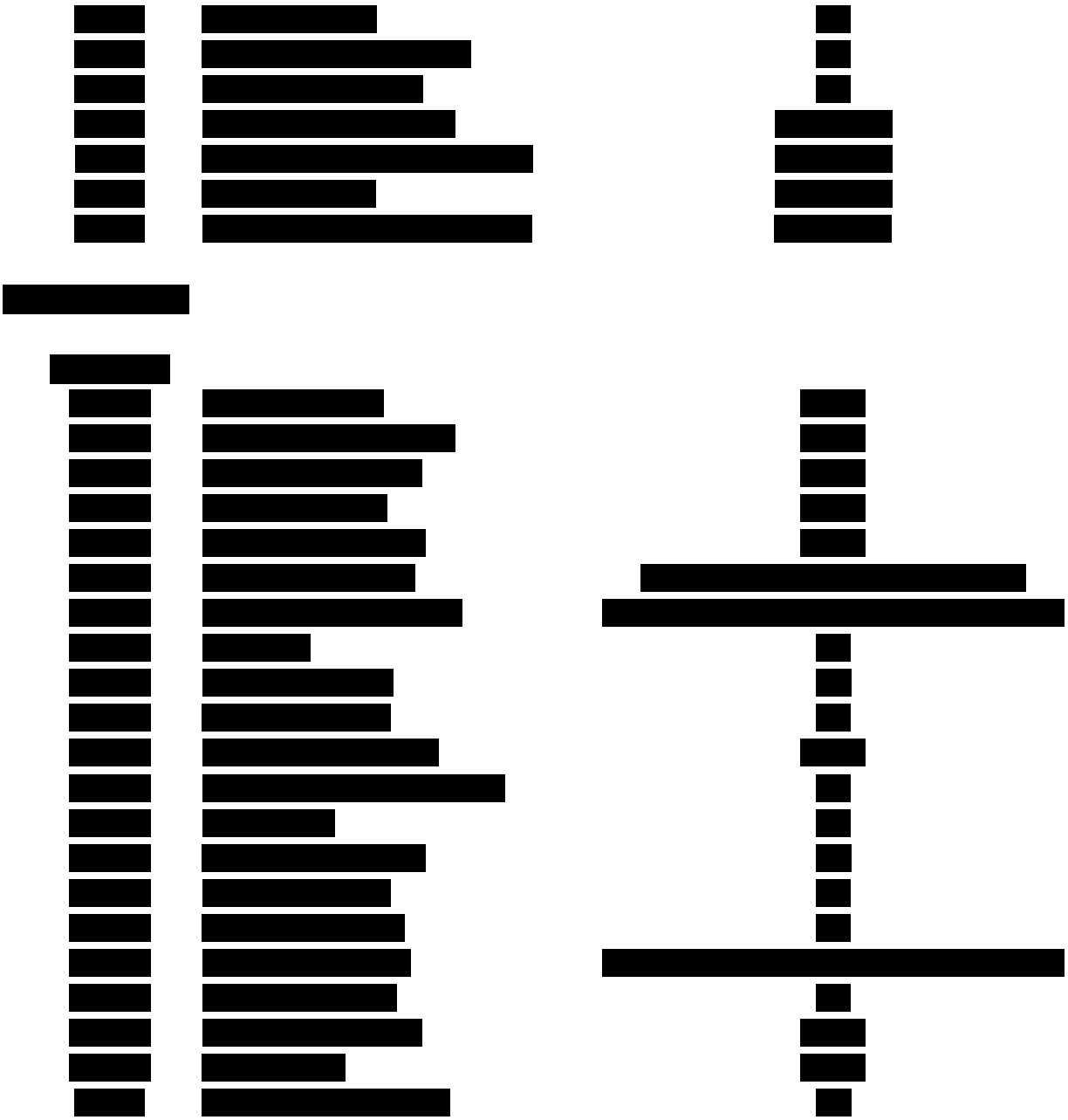
(Aurizon Network proposed and SKM recommended, with Aurizon Network's summary response)

Attachment C – further information (not for publication)

MCI Cost Groupings (30/4 Submission Methodology)

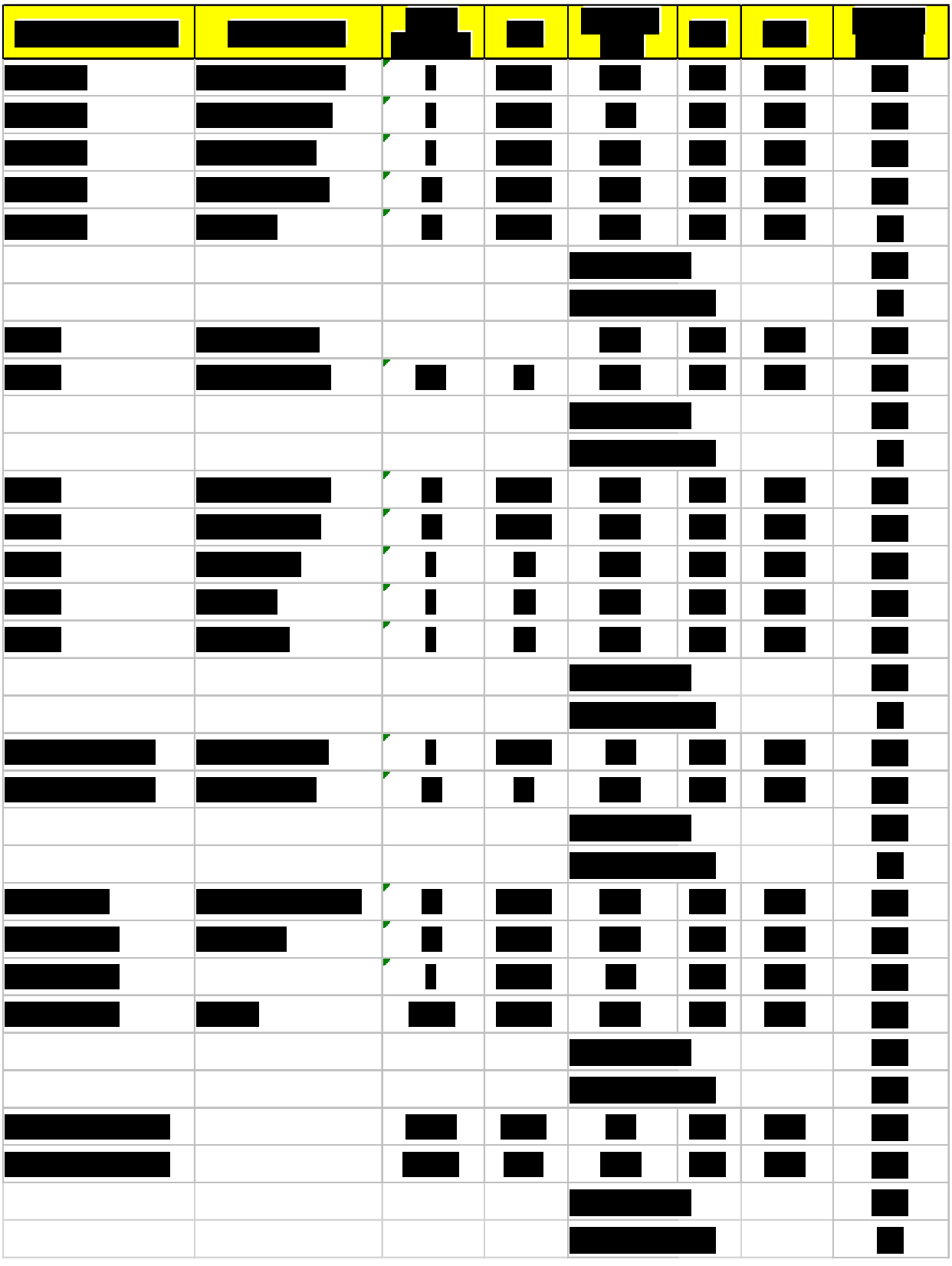






Attachment D – further information (not for publication)

Plant Hire Costs (COMMERCIAL IN CONFIDENCE – NOT FOR PUBLICATION)



Ballast costs

Quarry	FY10	FY11	FY12	FY13	4 yr Change	Annual Average
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
				[redacted]	[redacted]	[redacted]