8. Task 3.2.5 – High Level Review of Forecast Operating Expenditure

Scope

8.1 RSMBC has been requested by QCA to:

- benchmark Aurizon Network's forecast operating expenditure for the CQCN with relevant industry comparators; and
- compare the forecast operating expenditure to historical operating expenditure at both the regional and system levels.

8.2 As part of the above process, RSMBC has been requested by QCA to consider relevant submissions from QRC, Asciano, BMA and BMC and RTCA.

Background

8.3 Aurizon Network's proposed MAR for the UT4 period includes an allowance for the following operating expenses.

UT4 Proposed operating costs	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
Train control, safeworking and operations	31,132	32,648	34,210	35,724
Infrastructure management	15,935	16,630	17,344	18,039
Business management	10,511	10,952	13,847	13,457
System wide direct costs	57,578	60,230	65,401	67,220
Corporate overheads	65,973	68,619	71,288	73,866
	123,551	128,849	136,689	141,086

(in nominal dollars)

8.4 In addition to the above, the proposed operating expenses for the UT4 include allowances for the following costs which have not been included within the scope of this review:

- risk and insurance;
- transmission connection costs; and
- electricity on selling costs

Benchmarking of Aurizon Network's forecast operating expenditure

8.5 The scope of our review was constrained to an examination of those costs that can be directly or indirectly attributed to the provision of the rail services on the CQCN Systems.

8.6 The costs of infrastructure maintenance and capital expenditure were explicitly excluded from the scope of the benchmarking.

8.7 In undertaking our benchmarking, we selected ARTC's Hunter Valley Network in NSW and the Brookfield Rail Network in WA to compare key aspects of the cost structure for the CQCN with the cost structure for other similar operations on the basis that these two entities undertake similar activities within Australia and information on operating costs is publicly available for the operation of both networks.

8.8 It should be noted that no two access providers are the same. Therefore, any benchmarking exercise can only provide an "indicative" comparison.

8.9 We note that Aurizon Network operates a larger sized network than the ARTC Hunter Valley coal network, its closest comparative in Australia in terms of operational characteristics.

8.10 The Brookfield Network is smaller than both Aurizon Network and ARTC Hunter Valley and operates as a stand-alone network access provider. The ARTC Hunter Valley Network is part of a larger national network operation with ARTC also operates interstate freight rail networks.

8.11 The Hunter Valley Network is also managed by the Hunter Valley Coal Chain Coordinator ("HVCCC"), which is responsible for day to day planning and scheduling and long term capacity planning. This contrasts with the CQCN, where Aurizon Network retains full responsibility for these activities and costs. From the publicly available benchmarking information, it is not clear to what extent the costs of the HVCCC are funded by ARTC and reflected in the benchmarking information.

8.12 We consider that the variables applying to below rail access providers should not vary a great deal based on GTK, if the operations are of similar track length and complexity.

8.13 We consider that the nature of operating costs within a business such as Aurizon Network would be largely fixed in nature. Any increases in costs would likely be 'step changes' caused by increases in volumes or Network size constraining a function to above its current capacity. Operational differences impacting cost may include:

- hours of operations, particularly train control may vary depending upon number of train paths. Whilst all of the companies reviewed are 24/7 operations, the number of panel operators required may be reduced at times;
- level of automation may vary;
- locations, such as control rooms, if in a remote area may present additional challenges than if located in a less remote area;
- complexity of the operations could require more train controllers and more expensive equipment and supporting systems; and
- UT4 forecast growth resulting in longer trains could, without corresponding changes in infrastructure, such as increased length of sidings and passing loops, make the operations more complex.

8.14 Aurizon Network has identified a number of factors and differences between its operations and that of the comparable entities that also impact on the assessment of the benchmarking results including:

- Aurizon Network operates a system with significant route electrification;
- Aurizon Network's CQCN system is predominantly in a remote location and in a region which endures more extreme weather conditions compared with the Hunter Valley coal system resulting in higher operational complexity and costs;
- Aurizon Network is part of a more complex supply chain structure when contrasted with the Hunter Valley coal system which interfaces with one port precinct which is governed by the HVCCC. The Central Queensland Ports have significant different operating modes which directly affect the capacity and operation of the Central Queensland Coal System. For example the Dalrymple Bay Coal Terminal has a cargo assembly model which places significantly more strain and operational complexity onto the rail and mine components of the supply chain compared with the Hunter Valley;
- Interconnectivity of the four systems creates complexity with respect to access rights, cross system tariffs and operations to several terminals both domestic and export; and

- the introduction of short term transfers system will also add complexity to train scheduling. As a response to feedback from customers for greater flexibility in the management of access rights, including for the purpose of managing take or pay obligations, Aurizon Network has agreed with the proposal to introduce of a process to facilitate short term transfers, by enabling customers within a cluster (or within a short geographical distance of each other) to seek pre-approval of a transfer.

8.15 For the purpose of the benchmarking, where applicable, comparative figures were adjusted to reflect 2013/2014 dollars.

8.16 RSMBC has adopted the following methodology to undertake the benchmarking exercise:

- we compared the final year UT3 actual operating costs to the first year UT4 operating forecast costs;
- we benchmarked the operating costs against the two comparable Australian rail access providers based on publicly available information; and
- we established an indicative "Shadow" benchmark company using a bottom up cost approach, based on information not publicly available and based on the experience in operating railway networks of rail industry experts engaged by RSMBC as part of our review.

8.17 The benchmarking analysis has been undertaken on the basis of:

- total absolute dollars;
- $/track km
- $/train path (where information is available);
- $/GTK (forecast); and
- $/GTK (contracted);

8.18 Aurizon Network's costs have been benchmarked on contracted volumes in addition to forecast volumes on the basis that Aurizon Network is required to be in a position to resource to contract or peak capacity levels. Aurizon Network is required to manage its operations to cater for contracted obligations, which will impact on Aurizon Network's ability to reduce costs when forecast volumes are below contracted levels.

8.19 The following expense categories are included within Operating Costs:

- Train control (costs including safe working and operations administration);
- Infrastructure management (costs of infrastructure management which includes asset business and assurance management, electric assets management, telecommunication and signalling assets management, track and civil assets management, asset strategy and corridor asset management activities); and
- Business management (costs related to regulation and policy, master planning, new business and major project activities).

8.20 A separate total cost benchmarking exercise, including the overhead costs of Aurizon Network is set out in section 9 of our report.

RSMBC Findings

Comparison of the final year UT3 actual operating cost to the first year UT4 forecast

8.21 The table below sets out the actual operating costs and GTK for the final UT3 year (the year ended 30 June 2013) and forecast operating costs and GTK for the first year of UT4.

	UT3 (2012/2013)	UT3 (Adjusted to 2013/2014)	UT4 (2013/2014)	% change
Operating Cost ($ million)	54.815	57.010	57.579	1.0%
Track Km	2,590	2,590	2,590	-
Operating Cost/Km	$21,164	$22,012	$22,230	1.0%
Train Paths	43,292	43,292	47,372	9.4%
Operating Cost/Train Path	$1,266	$1,317	$1,215	(7.7%)
GTK - Forecast (million)	71,572	71,572	80,513	12.5%
Operating Cost/ Forecast GTK (cents)	0.077	0.080	0.072	(10.0%)

8.22 Operational costs for the final year of UT3 are based on actual costs provided by Aurizon Network, adjusted to reflect the different classification of utility costs in UT3 (included within operating expenses) and UT4 (included within overheads) as discussed in paragraphs 8.126 to 8.129.

8.23 There is an increase, in nominal dollars, in operating costs of +5.0% between the final year of UT3 and the forecast for year 1 of UT4.

8.24 Adjusting the final year of UT3 costs to 2013/14 dollars based on applying CPI of 2.5%[24] to non-labour costs and a labour indexation factor of 4.5%[1] to labour costs results in a increase in real terms between the final year of UT3 and the initial year of UT4 of 1.0%.

8.25 We note that Aurizon Network forecasts an increase in GTK volumes of 12.5% between the final year of UT3 and the first year of UT4.

8.26 Costs on a $/train path basis are forecast to decrease 7.7% in real terms between the final year of UT3 and the first year of UT4. Costs on a $/forecast GTK are forecast to decrease 10.0% in real terms between the final year of UT3 and the first year of UT4

8.27 We consider that the nature of operating costs within a business such as Aurizon Network would be largely fixed in nature. Any increases in costs would likely be 'step changes' caused by increases in volumes or Network size constraining a function to above its current capacity. As an example, the addition of an additional train control board would result in the requirement for addition FTE numbers to operate that board on a 24/7 basis.

8.28 A detailed comparison of historical operating expenses and forecast operating expenses on a year by year basis is set out later in this section of our report.

[24] Based on indexation factors used by Aurizon Network and set out in Volume 3 of the 2013 Draft Access Undertaking

Benchmark to other comparable rail access providers using publicly available information

8.29 There is limited publicly available information on the financial costs of other below rail operators. Additionally, there are potentially inconsistencies in the available information in relation to the classification of costs. In undertaking a benchmark of Aurizon Network's proposed UT4 operational costs, the following below rail access providers have been identified and benchmark operational cost comparisons estimated based on publicly available information, or through discussion with representatives within the companies:

- Brookfield Rail[25]; and
- ARTC (Hunter Valley)[26].

8.30 For the purpose of this comparative, the selected provider's sourced figures were adjusted to reflect 2013/2014 dollars based on the CPI and wage indexation factors used by Aurizon Network and set out in Volume 3 of the 2013 Draft Access Undertaking.

8.31 We note that the above two rail access providers formed the basis of the benchmarking undertaken as part of the assessment of UT3 operational expenses.

8.32 Both companies are large rail access providers within Australia, with significant freight components. We note that both of the rail operations utilised as benchmarks are smaller in terms of Track Kms than Aurizon Network's rail network.

8.33 We further note that there are a number of inconsistencies between the two access providers selected and the Aurizon Network operation. These include:

- Brookfield Rail data is not available for the same time period and therefore needed to be adjusted to 2013/14 dollars;
- different freight mix and volumes;
- Brookfield Rail and ATRC (Hunter Valley) operations are both smaller than Aurizon Network's; and
- only high level cost information is publicly available and therefore, we are unable to confirm the consistency of classifications (for example, what costs are included in maintenance as opposed to asset management).

8.34 The benchmark costs utilised in relation to ARTC (Hunter Valley) were based on forecasts prepared in 2010 as part of the 2010 Hunter Valley Access Undertaking application and ACCC review. The information was presented in calendar years. Therefore, to match financial information with the financial years utilised by Aurizon Network, the ARTC (Hunter Valley) benchmark information was based on the average forecast costs for the year ending 31 December 2013 and the year ending 31 December 2014.

[25] Source: PwC review of Westnet Rail's 2009 Floor and Ceiling Costs report. (table 12, 2009 recommended costs)

[26] Source: ARTC Application – HVAU 2010 – Hunter Valley Forecast 2011-2019 (public version)

8.35 We have been unable to undertake a benchmarking of costs against ATRC (Hunter Valley) and Brookfield Rail on a $/train path basis, as train path information for both entities is not publicly available. We have been unable to undertake a benchmarking of costs against Brook Brookfield Rail on a $/contracted GTK basis, as contracted GTK information for Brookfield Rail is not publicly available

8.36 The following table summarises the results of the benchmarking exercise.

	UT4 (2013/14 forecast)	Brookfield Rail (2009 adj)	ARTC Hunter Valley (Avg 2013/14 forecast)
Operating Cost ($ million)	57.58	14.33	29.73
Track Km (estimated)	2,667[27]	1,997[28]	1,336[29]
Operating Cost / Track Km	$21,590	$7,176	$22,252
Forecast GTK (million)	80,513	23,532	43,309
Operating Cost / Forecast GTK (cents)	0.072	0.061	0.069
Contracted GTK (million)	107,138	N/a	43,309[30]
Operating Cost / Contracted GTK(cents)	0.054	N/a	0.069

(in 2013/14 real dollars)

[27] Source: Aurizon Network

[28] Source: ARTC Hunter Valley business presentation dated March 2012

[29] Source: Economic regulation Authority, WA, Final Determination on the Proposed 2009-2010 Floor and Ceiling Costs (30 June 2009).

[30] Based on ARTC Explanatory Guide 2010 HVAU -Appendix 7 - ARTC revised Interim Indicative Access Charges which explains that forecast volumes arebased on expected contract volumes.

8.37 No adjustment has been made to reflect differences in operations or structure between the selected comparatives. This would entail further detailed analysis. Therefore, the comparatives can only be considered indicative.

8.38 On a $/track km and on a $/GTK basis, Aurizon Network's forecast operating costs are broadly consistent with ARTC (Hunter Valley). Brookfield Rail's operating costs are significantly below both Aurizon Network and ARTC (Hunter Valley).

8.39 Further detailed analysis of the selected operations would be required to ascertain the reason for the variance between Brookfield Rail and the other two operations.

Indicative "Shadow" benchmark

8.40 In establishing the indicative "Shadow" benchmark with the assistance rail industry experts engaged by RSMBC as part of our review, we have:

- estimated the number of staff and average labour costs required based on functions, as a below rail / infrastructure manager, to manage the CQCN business as a standalone entity together with associated running costs. This is based on the experience the rail industry experts in leadership and executive management roles on railways; and
- tested the reasonableness of the above using confidential information with comparable railways to which our rail industry experts have access. Due to the confidential nature of the information utilised, we are unable to disclose the details of these comparable railways.

8.41 A number of adjustments were applied to the "base" cost model developed in order to reflect the current operational structure of Aurizon Network.

8.42 The key adjustments within Operational Costs reflected:

- additional staff required due to the largely manual operation and management of yards;
- duplication and impact of remoteness of operation of control rooms; and
- higher level of activity apparent in HS&E than is assumed as being required for a similar sized operator.

8.43 We consider that the above matters represent opportunities where future operational expenditure savings may potentially be generated.

8.44 The indicative Shadow operator comparatives are adjusted to reflect the same track length, UT4 GTK and costs in 2013/2014 dollars.

Benchmark summary

8.45 The table below sets out a comparison of the 2013/14 UT4 forecast and the indicative "Shadow" benchmark.

	Indicative Shadow	UT4 (2013/14 forecast)	UT4 v Shadow
Track Km	2,667	2,667	-
Operating Cost ($ million)	52.83	57.58	9.0%
Operating Cost / Track Km	$19,809	$21,590	9.0%
Train Paths	47,372	47,372	-
Operating Cost / Train Path	$1,115	$1,215	9.0%

8.46 The cost differences of operating over the same length of track is about 9% less for the indicative "Shadow" operator when compared to UT4.

8.47 The above difference should be considered on the basis that the benchmarking operation undertaken has been primarily a desk-top exercise. Therefore the above benchmarking should be considered as indicative only.

8.48 A full operational and organisational analysis of Aurizon Network operations would be required to arrive at firm conclusions with regard to an efficient operating model for the Aurizon Network.

Consideration of Stakeholder Submissions

QRC, BMA/BMC & RTCA – Use of ARTC as a benchmark entities

8.49 QRC BMA/BMC have submitted that ARTC should be utilised as a because ARTC is a very similar business to Aurizon Network and that cost information on ARTC is publicly available through regulatory processes.

8.50 RTCA has also recommended that ARTC along with Queensland Rail should be utilised as benchmarks.

RSMBC Comments

8.51 RSMBC has utilised ARTC (Hunter Valley) as a comparable benchmark entity. In considering the results of this benchmarking, the factors outlined in paragraphs 8.8 (page 90) to 8.14 (page 91) need to be considered.

8.52 RSMBC has not utilised Queensland Rail as a benchmark on the basis that Queensland Rail's operations include a significant proportion of passenger transit and therefore, in our opinion, are not as directly comparable.

Conclusion

8.53 This benchmarking exercise has a number of constraints that need to be recognised. In particular, that quality and level of information for the comparative below rail access providers is limited.

8.54 The key points noted from our benchmarking of operational expenditure were:

- The comparative cost per operating Track Km and per forecast GTK between ARTC (Hunter Valley) and Aurizon Network are materially consistent;
- The comparative cost per contracted GTK between ARTC (Hunter Valley) and Aurizon Network is 21.8% lower;
- The comparative cost per operating Track Km between Brookfield Rail and both ARTC (Hunter Valley) and Aurizon Network is significantly lower; and
- The comparative costs for our benchmark "Shadow" is 9% lower than Aurizon Network's forecast costs.

8.55 Based on a desktop benchmarking exercise the ability to drill down further is limited.

8.56 We consider that, whilst there may be some justifiable reasons for a differential between the indicative "Shadow" benchmark costs and Aurizon Network's proposed operating costs, there may also be potential opportunities for Aurizon Network to reduce operating expenditure, particularly in relation to control room operations and the management of yards.

8.57 Should QCA consider that further investigation and justification of both the difference between our indicative "Shadow" benchmark costs and the possibility for further operational savings, we recommend that a more detailed review, including site visits, be undertaken.

8.58 Based on the above benchmarking exercise, the proposed Operational Costs do not appear unreasonable.

Comparison of forecast operating expenditure to historical operating expenditure

Work undertaken by RSMBC

8.59 We have performed the following:

- obtained from Aurizon Network historical financial information in a format consistent with the classification and presentation of the UT4 forecast operating expenditure;
- prepared an annual summary, for both the total operating costs and for each cost category, comparing the historical costs of UT3 and the forecast costs of UT4 both on the basis of absolute dollars and dollars per train path;
- where there was a significant variance in costs, either in terms of an agreed materiality level, or in terms of a movement of +/- 5%, we requested an explanation for the variance from Aurizon Network; and
- we assessed the responses from Aurizon Network for reasonableness and requested further supporting documentation where considered necessary.

RSMBC Findings – Corporate Costs

8.60 As the corporate costs included in the proposed MAR for the UT4 period represent an allocation of Aurizon Holdings' total group corporate costs, we have undertaken an analysis of corporate costs at the Aurizon Holdings' total cost level.

8.61 We have then considered the implications of any findings from our review on the allocation of costs to Aurizon Network, based on the corporate cost allocation methodology (as reviewed in section 3 of this report).

8.62 In comparing the historical corporate costs of Aurizon Holdings over the UT3 period to those utilised as the basis for forecasting the UT4 corporate costs, Aurizon Holdings' management has also raised the following that has been considered within our analysis:

- the corporate costs for FY11 include a number of costs relating the IPO of Aurizon Holdings on the ASX; and
- in December 2012, Aurizon Holdings commenced a restructure to consolidate all corporate overhead services into centralised divisions that provide shared services across the Aurizon Holdings group. This has resulted in a number of costs previously recorded within above and below rail business units now being reported within corporate costs.

8.63 As we have only been able to analyse corporate costs at the Aurizon Holdings group level, we have not analysed these costs on a system or a $/train path basis. Given the nature of corporate costs we do not consider that this analysis would have had a material impact on our findings.

8.64 In addition to the historical costs for the UT3 period, Aurizon Holdings has also provided us with budgeted costs for 2013/14 based on the latest Aurizon Holdings' corporate plan. We have, therefore, also considered this information in our analysis.

8.65 The table below summarises, by function, the actual corporate costs of Aurizon Holdings for the 3 years ended 30 June 2013, the corporate costs allocated to Aurizon Network in the UT4 submission (FY 2013 forecasts) and the budgeted corporate costs for the year ended 30 June 2014.

Aurizon Holdings - Corporate Cost Analysis	Year ended 30 June 2011 Actual $'000	Year ended 30 June 2012 Actual $'000	Year ended 30 June 2013 Actual $'000	UT4 Submission Forecast $'000	Year ending 30 June 2014 Budget $'000
Description					
Finance					
General Counsel and Company Secretary					
Internal Audit and ERM					
Information Technology					
Human Resources					
Safety Health & Environment					
Enterprise Real Estate					
Enterprise Procurement					
Enterprise Strategy and Branding					
CEO and Board					
Non-benchmarked Functions					
Corporate Strategy					
Unallocated					
Total					
Less: One off abnormal costs					
Add: Real estate costs included in 2013 previously reported in business unit divisions					
Total adjusted corporate costs					

Source: Aurizon Holdings Management
In nominal dollars

8.66 Corporate costs have been amended for one off abnormal costs as set out below.

Year	$'000	Details
30 June 2011	161,700	▪ $44 million relating to restructuring and separation of the discontinued business; ▪ $55 million relating to one off payments to employees under enterprise agreements and incentives schemes for management and employees on listing; and ▪ $63 million relating to redundancy costs
30 June 2013	68,827	$96 million relating to redundancy costs; and ($27) million received in relation to the refund of stamp duty paid in 2010
UT4 submission forecast	$91,357	Estimated redundancy costs

8.67 Total corporate costs for the years ended 30 June 2011 and 30 June 2012 are adjusted to include real estate costs that have been included as centralised costs during the year ended 30 June 2013 and onwards, but were included in divisional costs in prior years.

8.68 An analysis of the movement in costs of each of the functional areas of Aurizon Holdings is set out below.

Finance

8.69 Finance costs for FY 2011 included a number of one off abnormal costs in relation to restructuring costs, staff bonuses paid on listing and redundancy costs.

8.70 FY 2012 also included a number of large cost items that were reallocated to operating functions in FY 2013 resulting in a significant decrease when comparing FY 2013 ($[redacted] million) and FY 2012 ($[redacted] million). These include depreciation costs, asset impairment expenses, leave adjustments and bonuses.

8.71 Actual costs for FY 2013 were circa $[redacted] million below the forecast FY 2013 costs used as the basis of the UT4 submission.

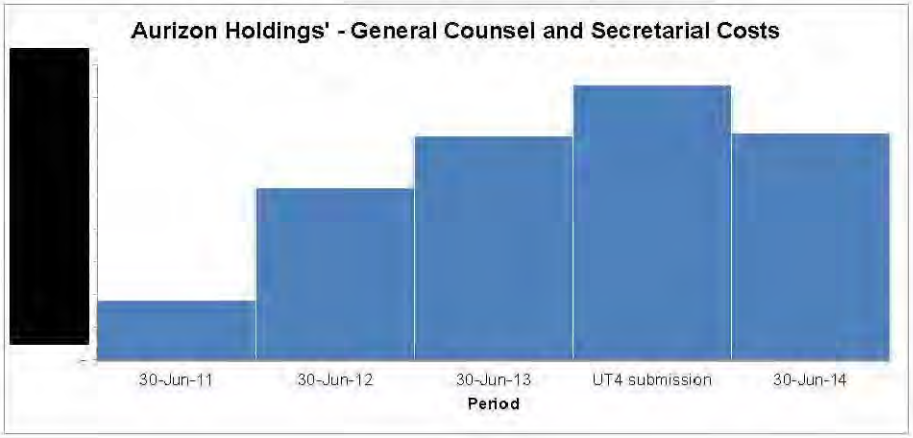
8.72 Budgeted costs for FY 2014 ($[redacted] million) are circa $4.2 million lower than the forecast FY 2013 costs ($[redacted] million) used as the basis of the UT4 submission and $[redacted] million below actual costs for FY 2013 ($[redacted] million).

8.73 The reduction is primarily due to:

- Aurizon Holdings targeting cost reductions in the finance area of circa $[redacted] million; and
- Fringe Benefit Tax expenses of circa $[redacted] million being allocated to other functional divisions instead of all being recognised in finance costs.

8.74 The corporate costs utilised to allocate costs to below rail operations over the UT4 period make no allowance of the targeted cost reductions of circa $[redacted] million. We consider that it would not be unreasonable for an adjustment to be made to the UT4 corporate overhead costs to include an allocation of these forecast cost savings.

General Counsel and Company Secretary



8.75 General counsel and company secretarial costs for FY 2012 ($[redacted] million) increased significantly on costs of FY 2011 ($[redacted] million) as a result of:

- increased company secretarial costs following listing of the company on the ASX; and
- centralisation of legal services.

8.76 General counsel and company secretarial costs for FY 2013 ($[redacted] million) increased on costs of FY 2012 ($[redacted] million) as a result of increased external legal fees for major projects, including the UT4 submission and Standard User Funding Agreements.

8.77 Actual costs for FY 2013 were circa $[redacted] million below the forecast FY 2013 costs used as the basis of the UT4 submission. The difference primarily relates to share registry costs. The 2013 forecast costs were based on the assumption of a higher shareholder base than actually eventuated. Aurizon Holdings' management advised that the FY2013 share registry costs are more reflective of the expected future costs, with this being reflected in the FY 2014 budget, which is in line with FY 2013 actual costs.

8.78 Based on the above, the general counsel and corporate secretarial costs utilised as the basis of allocating costs to below rail activities appear overstated by $[redacted] million. We consider that it would be reasonable that an adjustment be made to the UT4 corporate overhead costs to include an allocation of this overstatement.

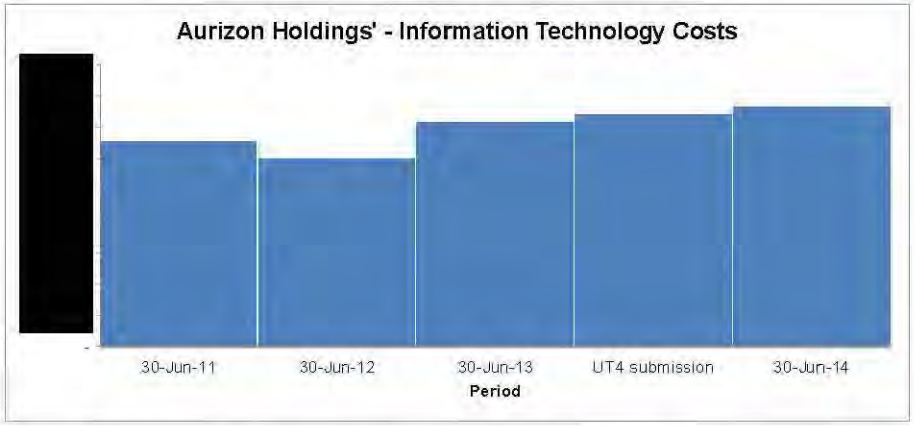
Internal audit and enterprise risk management

8.79 Internal audit and enterprise risk management costs for FY 2013 ($[redacted] million) increased on costs of FY 2012 ($[redacted] million) as a result of the centralisation of services into corporate cost centres.

8.80 Actual costs for FY 2013 were circa $[redacted] million below the forecast FY 2013 costs used as the basis of the UT4 submission. However, FY 2013 enterprise risk management costs included a one off $[redacted] credit in relation to the reduction in workers compensation provisions. Excluding this accounting adjustment, actual costs were circa $[redacted] below the forecast FY 2013 costs.

8.81 FY 2014 budget costs ($[redacted] million) are in line with FY 2013 forecasts, after adjustment for indexation.

Information technology

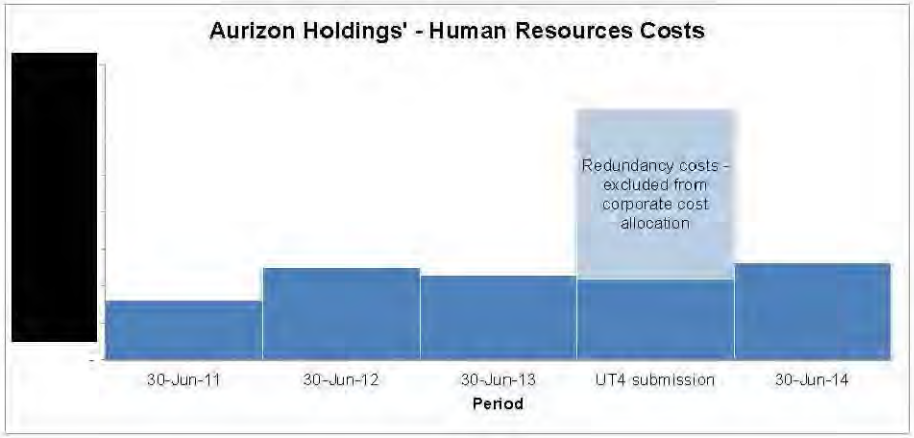


8.82 Information technology costs for FY 2012 ($[redacted] million) decreased by 9% compared to information technology costs for FY 2011 ($[redacted] million) as a result of Aurizon Holdings' implementation of cost reduction measures (primarily outsourcing) following the IPO of the company on the ASX.

8.83 Information technology costs for FY 2013 ($[redacted] million) increased by 16% compared to information technology costs for FY 2012 ($[redacted] million) as a result of the centralisation of IT costs into the Aurizon Holdings corporate area. A significant proportion of the increase relates to the recognition of the telephone backbone expenses within corporate overheads in FY 2013. These costs were previously included in Aurizon Network's infrastructure management overheads.

8.84 FY 2014 budget costs ($[redacted] million) are in line with FY 2013 forecasts, after adjustment for indexation.

Human resources



8.85 Human resource costs for FY 2012 ($[redacted]million) increased compared to FY 2011 ($[redacted]million) as a result of:

- one off costs of $[redacted] million in relation to the project to design and implement the functional organisational structure; and
- increases in share based payments to senior management following the company's IPO.

8.86 Human resource costs for FY 2013 ($[redacted] million) decreased compared to FY 2012 ($[redacted]million) as a net result of:

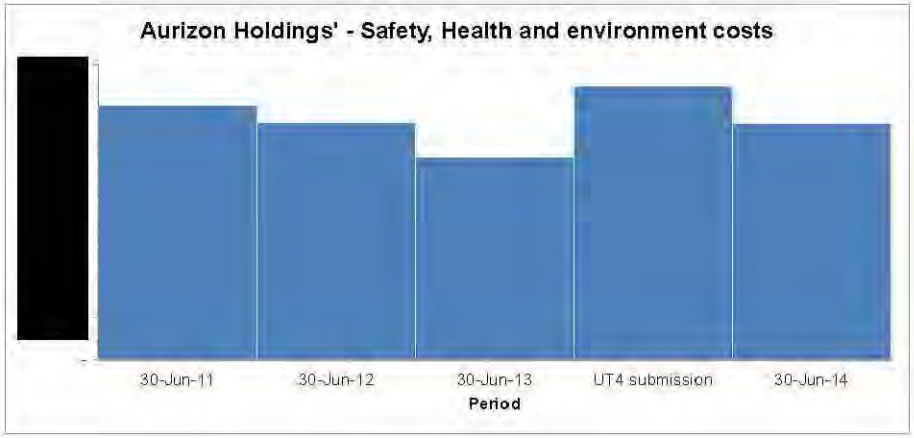
- the one off project as discussed above in FY 2012;
- an increase in group bonus payments; and
- a decrease in annual leave and long service leave provisions.

8.87 Forecast FY 2013 costs used as the basis of the UT4 submission included $[redacted]million of forecast redundancy costs. These costs were excluded from the corporate cost allocation to below rail activities. Excluding these costs, FY 2013 forecast costs ($[redacted] million) were slightly below FY 2013 actual costs ($[redacted]million).

8.88 FY 2014 budget costs ($[redacted]million) are forecast to be 14.0% higher than FY 2013 actual costs ($[redacted] million) with the increase in costs related to annual leave and long service leave adjustments recognised in FY 2013 not being included in FY 2014 as they represented a one off adjustment.

8.89 On the basis of the above, we consider that the human resources costs used as the basis for the UT4 submission were understated, based on the FY 2014 budget costs by circa $[redacted]million.

Safety, health and environment



8.90 Safety, health and environment costs for FY 2012 ($[redacted] million) decreased compared to FY 2011 ([redacted] million) as a result of a decrease in consultancy fees paid during the year offset, in part, by increased depreciation charges.

8.91 Safety, health and environment costs for FY 2013 ($[redacted] million) decreased further, as a result of Aurizon Holdings concluding a project with DuPont in FY 2012. DuPont were engaged to assist Aurizon Holdings with its Zero Harm Initiative.

8.92 Forecast FY 2013 costs used as the basis of the UT4 submission ($[redacted] million) were 35% higher than FY 2013 actual costs ($[redacted] million) and 16% higher than FY 2014 budget costs. The variance is primarily a result of:

- reductions from a drive to cut costs, including discretionary spending on professional fees, travel costs and labour costs (circa $[redacted]million);
- licence costs of $[redacted]million being recognised within the operating business functions instead of within corporate overheads; and
- the deferment of a national level crossing safety campaign which was delayed until FY 2014 and had budgeted costs of circa $[redacted] million.

8.93 The corporate costs utilised to allocate costs to below rail operations over the UT4 period make no allowance of the targeted safety, health and environment cost reductions of circa $[redacted]million. These cost savings relate to cost centres that have been classified as providing shared services to above rail and below rail activities.

8.94 We consider that it would be reasonable to include an adjustment to the UT4 corporate overhead costs to include an allocation of these forecast cost savings.

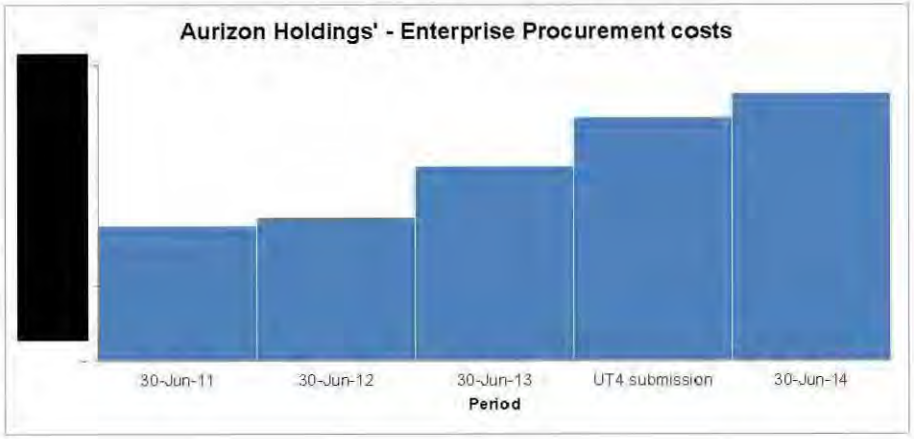
Enterprise real estate

8.95 Over 95% of the FY 2013 enterprise real estate costs relate to above rail activities. The enterprise real estate costs allocated to below rail activities have been calculated by Aurizon Network on the basis of the costs that relate to properties occupied for the purposes of providing below rail services.

8.96 Circa 80% of the enterprise real estate costs allocated to below rail activities relate to Aurizon Network's Ann Street office within the Brisbane CBD.

8.97 Given that the majority of Aurizon Holdings' enterprise real estate costs relate to above rail activities, and the historical and budgeted movement in those costs relates to above rail activities, we have not undertaken a review of the historical and budgeted Aurizon Holdings' enterprise real estate costs.

Enterprise procurement



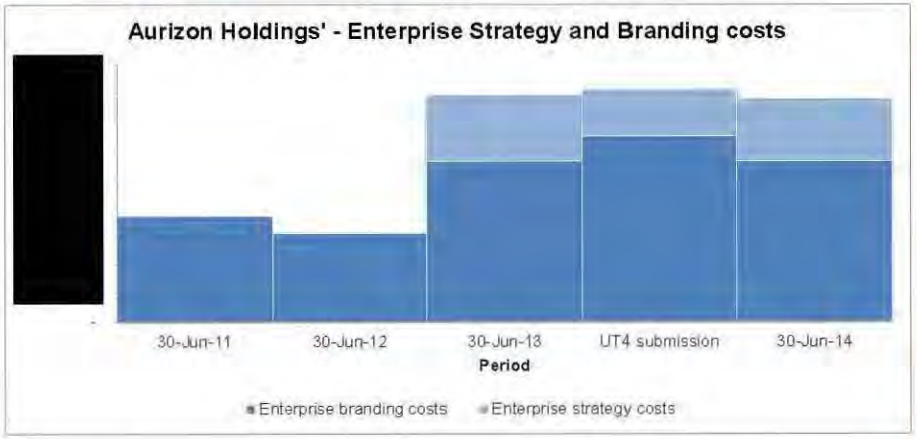
8.98 Enterprise procurement costs for FY 2013 ($[redacted]million) increased compared to FY 2011 ($[redacted] million) and FY 2012 ($[redacted] million) as a result of the centralisation of procurement costs within the functional organisational model.

8.99 Forecast FY 2013 costs used as the basis of the UT4 submission ($[redacted]million) were 25% higher than FY 2013 actual costs ($1[redacted] million). The variance was primarily a result of a reduction in actual labour and on costs compared to forecast as a result of a number of budgeted positions being vacant throughout FY 2013.

8.100 Budgeted costs for FY 2014 are $[redacted]million, representing a 37% increase compared to actual costs for FY 2013 and a 9.8% increase over FY 2013 budget. The increase in costs primarily relates to increases in forecast labour and related on costs, increases in contractor costs and computer software licensing. These increases relate to work on the E-catalogue solution. This project addresses the requirement to load newly contracted goods and services onto an easy to use self-service requisitioning platform.

8.101 We understand that this is anticipated to drive contract utilisation and contract price compliance to ensure that negotiated savings are realised over the term of the contract.

Enterprise strategy and branding



8.102 The enterprise strategy division is a new division formed in FY 2013 as a result of the new functional organisational structure.

8.103 Actual FY 2013 enterprise strategy costs ($[redacted] million) were marginally higher than forecast FY 2013 costs used as the basis of the UT4 submission.

8.104 Actual enterprise branding costs for FY 2013 ($[redacted] million) increased by 82% compared to FY 2012 costs ($[redacted]million).

8.105 Aurizon Holdings has advised that the ongoing branding costs of Aurizon Holdings have increased since becoming a listed company as the branding team and strategy have been developed. However, Aurizon Holdings has not provided any justification of the underlying reasons that necessitate these cost increases.

8.106 Forecast FY 2013 enterprise branding costs used as the basis of the UT4 submission ($[redacted]million) are 15% higher than FY 2013 actual costs ($[redacted]million). The variance is primarily a result of a reduction in professional fees as a result of the drive to reduce operating expenses.

8.107 FY 2014 enterprise branding costs are forecast at a consistent level to FY 2013 actual costs.

8.108 We consider that:

- based on the actual costs of FY 2013 and budget FY 2014 costs, the FY 2013 enterprise branding costs used as the basis of the UT4 submission appear overstated by circa $[redacted]million; and
- Aurizon Holdings has not been able to justify the additional branding costs incurred in FY 2013 and forecast in FY2014 subsequent to becoming a listed company These costs amount to circa $[redacted]million.

8.109 We consider it reasonable that an adjustment should be made to the UT4 corporate overhead costs to include an allocation of the above.

CEO and board costs

8.110 Total Aurizon Holdings' CEO and board costs include significant consultancy costs in the FY 2013, FY 2013 forecast and FY 2014 forecast years in relation to projects that are not related to the operation of the below rail network. These have been excluded by Aurizon Holdings from the allocation of corporate costs to below rail operations.

8.111 Excluding these costs, actual CEO and board costs for FY 2013 were in line with forecast FY 2013 used as the basis of the UT4 submission.

Non-benchmarked functions

8.112 These costs primarily relate to innovation, national policy, enterprise records management, business sustainability and business improvement divisions.

8.113 Costs in FY2012 ($[redacted]million) reduced compared to FY 2011 ($[redacted] million) as a result of a reduction in consultancy costs associated with the innovation division.

8.114 Actual costs for FY 2013 were in line with forecast FY 2013 used as the basis of the UT4 submission.

8.115 FY 2014 includes a negative amount of $[redacted] million in relation to a stretch target. This stretch target represents an overall corporate overhead cost saving that Aurizon Holdings' management is targeting in FY 2014. The saving has not been allocated to any individual cost centres. Additional stretch targets have also been incorporated within the Aurizon Holdings FY 2014 budget within specific general ledger accounts. The FY 2014 budget incorporates total stretch targets of circa $[redacted]million.

8.116 We note that no consideration was made in the UT4 corporate cost allocation of the above $[redacted] million stretch target.

8.117 We consider that it would be reasonable for a proportion of this overall stretch target to be allocated to below rail operations.

Corporate strategy

8.118 No corporate strategy costs have been allocated to below rail activities.

Consideration of Stakeholder Submissions

8.119 No stakeholder submissions were identified that were relevant to the scope of the high level review of corporate overheads.

Conclusion - Corporate Costs

8.120 Based on our high level review of corporate overhead costs, there are a number of adjustments we consider should be made to the corporate costs allocated by Aurizon Holdings to below rail activities.

8.121 The impact of these adjustments will differ depending on the corporate cost allocation methodology adopted. This is discussed in section 3 of our report.

8.122 The table below sets out the impact of the proposed adjustment to the 2012/13 corporate cost allocations based on:

- Aurizon Network's original proposed corporate overhead allocation methodology;
- replacing the blended rate allocations with a direct cost allocation methodology; and
- utilising an alternative blended rate utilising directs costs instead of revenue, with other components remaining unchanged.

2012/13 corporate cost allocation	Paragraph Reference	Total Corporate Cost Adjustment $'000	Aurizon Network's Proposed Cost Allocation Method	Aurizon Blended Rate $'000	Direct Cost Allocation $'000	Alternative Blended Rate $'000
Finance	8.69 - 8.74	[redacted]	Blended/Direct	[redacted]		
General counsel and company secretary	8.75 - 8.78		Blended/Direct			
Human resources	8.85 - 8.89		FTEs[1]			
Safety, health and environment	8.90 - 8.94		FTEs[1]			
Enterprise strategy and branding	8.102 - 8.109		Revenue[2]			
Overall Corporate Overhead stretch target *	8.115 - 8.117		Blended/Direct			
				7,907	3,629	6,848

Source: RSMBC Calculations
(costs in 30 June 2013 real terms)
** adjustment based on the full $25,800,000 stretch target for FY 2014 adjusted for CPI of 2.5% ($25.8 million divided by 1.025)*
[1] FTE allocation percentage remains unchanged under all scenarios
[2] FTE allocation percentage remains unchanged under all scenarios

8.123 For the purposes of the above table, we have demonstrated the impact of an adjustment representing 100% of the FY2014 stretch target.

RSMBC Findings – System Wide Direct Costs

Analysis of aggregate costs

8.124 Aurizon Network has split system wide operating expenses into the following divisions:

- train control, safe working and operations;
- infrastructure management; and
- business management.

8.125 The table below summarises, by division, the actual system wide costs of Aurizon Network for the 4 years ended 30 June 2013 and the forecast system wide costs for the UT4 period in terms of absolute dollars and on a $/train path basis. The $/train path cost over the UT4 period is calculated based on both Aurizon Network's forecast train paths and, as requested by the QCA, a 10% reduction on Aurizon Network's forecast train paths to reflect a 10% reduction in forecast freight volumes.

Network Operations Operating Costs	Year ended 30 June 2010 Actual $'000	Year ended 30 June 2011 Actual $'000	Year ended 30 June 2012 Actual $'000	Year ended 30 June 2013 Actual $'000	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
Train control, safeworking and operations	29,084	28,209	27,395	26,143	31,132	32,646	34,210	35,724
Infrastructure management	25,214	20,002	23,446	16,815	15,934	16,629	17,343	18,039
Business management	10,112	8,964	8,211	10,628	10,512	10,952	13,848	13,457
Total Operating expenses (excluding corporate overhead)	**64,410**	**57,174**	**59,052**	**53,585**	**57,578**	**60,230**	**65,401**	**67,220**
Year on Year % change in cost		(11.2%)	3.3%	(9.3%)	7.5%	4.6%	8.6%	2.8%
Train paths	**48,576**	**41,145**	**40,366**	**43,292**	**47,372**	**52,832**	**56,272**	**60,676**
	$	$	$	$	$	$	$	$
$/train path	**1,326**	**1,390**	**1,463**	**1,238**	**1,215**	**1,140**	**1,162**	**1,108**
Year on Year % change in cost		4.8%	5.3%	(15.4%)	(1.9%)	(6.2%)	1.9%	(4.6%)
$/train path based on 10% reduction in forecasts	**1,326**	**1,390**	**1,463**	**1,238**	**1,350**	**1,267**	**1,291**	**1,231**
Year on Year % change in cost		4.8%	5.3%	(15.4%)	9.0%	(6.1%)	1.9%	(4.6%)

Source: Aurizon Network historical and forecast reports
Costs expressed in nominal dollars

8.126 A number of costs that were previously reported within the above system wide operating costs were reclassified and recognised within Aurizon Holdings' corporate costs in FY 2013.

8.127 These include:

- telecommunication backbone IT expenses (these have not been included in the above UT4 forecast costs); and
- utility costs (these were reported in actual Corporate Costs for FY 2013 but were included in the above UT4 forecast costs and were not included in the UT4 corporate overheads allocation).

8.128 To enable costs to be analysed on a consistent basis, we have:

- Adjusted the operating costs to reflect the reallocation of telecommunications backbone IT expenses included within operating costs in FY 2010, FY 2011 and FY 2012 as set out below; and

Network Operations Operating Costs - Normalised	Year ended 30 June 2010 Actual $'000	Year ended 30 June 2011 Actual $'000	Year ended 30 June 2012 Actual $'000	Year ended 30 June 2013 Actual $'000
Telecommunications backbone expense - 30 June 2013				1,875
30 June 2013 expense adjusted for CPI at 2.5%	1,737	1,782	1,828	
Actual telecommunications backbone expense	4,220	11,067	12,872	
Deduction to remove impact of reallocation	2,483	9,285	11,044	

Source: Aurizon Network historical and forecast reports and RSMBC Calculations

- added estimated utilities expenses for FY 2013 based on the FY 2012 actual expense adjusted for CPI of 2.5%.

8.129 The table below summarises the adjusted system wide costs of Aurizon Network for the 4 years ended 30 June 2013 and the forecast system wide costs for the UT4 period in terms of absolute dollars and on a $/train path basis. The $/train path cost over the UT4 period is calculated based on both Aurizon Network's forecast train paths and, as requested by the QCA, a 10% reduction on Aurizon Network's forecast train paths to reflect a 10% reduction in forecast freight volumes.

Network Operations Operating Costs - Normalised	Year ended 30 June 2010 Actual $'000	Year ended 30 June 2011 Actual $'000	Year ended 30 June 2012 Actual $'000	Year ended 30 June 2013 Actual $'000	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
Total Operating expenses (excluding corporate overhead)	**64,410**	**57,174**	**59,052**	**53,585**	**57,578**	**60,230**	**65,401**	**67,220**
Normalisation adjustments								
Remove telephone communication back bone costs	(2,483)	(9,285)	(11,044)	-	-	-	-	-
Add: estimated utility costs - 30 June 2013	-	-	-	1,230	-	-	-	-
	61,927	**47,889**	**48,008**	**54,815**	**57,578**	**60,230**	**65,401**	**67,220**
Year on Year % change in cost		(22.7%)	0.2%	14.2%	5.0%	4.6%	8.6%	2.8%
Train paths	**48,576**	**41,145**	**40,366**	**43,292**	**47,372**	**52,832**	**56,272**	**60,676**
Year on Year % change in cost		(15.3%)	(1.9%)	7.2%	9.4%	11.5%	6.5%	7.8%
	$	$	$	$	$	$	$	$
$/train path	**1,275**	**1,164**	**1,189**	**1,266**	**1,215**	**1,140**	**1,162**	**1,108**
Year on Year % change in cost		(8.7%)	2.1%	6.5%	(4.0%)	(6.2%)	1.9%	(4.6%)
$/train path based on 10% reduction in forecasts	**1,275**	**1,164**	**1,189**	**1,266**	**1,350**	**1,267**	**1,291**	**1,231**
Year on Year % change in cost		(8.7%)	2.1%	6.5%	6.6%	(6.1%)	1.9%	(4.6%)

Source: Aurizon Network historical and forecast reports and RSMBC Calculations
Costs expressed in nominal dollars

8.130 On an absolute dollar basis, system wide operating expenses reduced by 22.7% during the year ended 30 June 2011, compared to the year ended 30 June 2010. This was primarily a result of cost reductions following the demerger with the Queensland Rail passenger business as staff were allocated between the two organisations and then appropriate resources were recruited in both organisations (primarily employee, consultancy and consumable costs).

8.131 System wide operating expenses remained consistent in the year ended 30 June 2012, increasing by 0.2% (representing a reduction in real terms as the percentage increase was below inflation).

8.132 System wide operating expenses increased by 14.2% in the year ended 30 June 2013 compared to the year ended 30 June 2012. This was primarily a result of the restructure implemented in the year ended 30 June 2013 that transferred the costs of the engineering and compliance functions from asset maintenance costs into system wide costs resulting in circa $5.8 million of additional employee costs being included within system wide operating expenditure.

8.133 System wide operating expenses are forecast to increase by 5% during the year ending 30 June 2014, primarily as a result of the net impact of:

- a reduction in regulatory compliance costs related to UT4 development;
- wage inflation and CPI increases; and
- increased train control employee numbers to account for vacant positions during the year ended 30 June 2013.

8.134 Over the remainder of the UT4 period, Aurizon Network has applied CPI and wage cost inflation to the 30 June 2013 forecast system wide operating expenses, other than one off additional costs in relation to regulatory division relating to forecast UT5 preparation costs in the years ending 30 June 2016 and 30 June 2017 of $2.5 million and $2.0 million, respectively.

8.135 On a $/train path basis, the $/train path cost over UT3 fell. This is primarily reflective of the cost reductions implemented following the demerger with the Queensland Rail passenger business as staff were allocated between the two organisations and then appropriate resources were recruited in both organisations (primarily employee, consultancy and consumable costs).

8.136 The $/train path is forecast to decrease over the UT4 period. This is primarily driven by the increase in forecast train path numbers.

8.137 We consider that system wide direct costs would not be entirely variable and therefore, where train path numbers are forecast to grow at a rate above CPI/wage inflation, we would expect to see a reflective decrease in $/train path costs.

8.138 In the scenario where forecast train paths are reduced by 10% against Aurizon Network's forecast $/train paths would increase by 6.5% in the year ending 30 June 2014. This increase is reflective of the forecast increase in employee costs for the year ended 30 June 2014.

8.139 $/train paths are then forecast to reduce over the remaining 3 years, as train path volumes are forecast to increase.

8.140 We have undertaken further analysis of each of the following divisions of Aurizon Network:

- train control, safe working and operations;
- infrastructure management; and
- business management.

Train Control, Safe working and Operations

8.141 The train control, safe working and operations division is involved in the operation and planning of train paths throughout the CQCN.

8.142 The main activities performed are:

- train control and scheduling (path negotiation and allocation);
- operations planning;
- operations management;
- master maintenance planning;
- incident management;
- performance planning, reporting and analytics;
- closure planning, command and control; and
- design and promotion.

8.143 The divisional costs primarily relate to labour and associated on-costs which comprise circa 93% of the costs for the year ended 30 June 2013.

8.144 A high level breakdown of the staff structure of the train control operations division is set out below.

Position	Roles *
Control Centre Manager	• Overall responsibility for the control centre.
Business Managers	• Overall accountability for the train control centre for the shift; • Managing interactions with customers and regulators; • Incident management; and • Reporting to the control centre manager.
Performance Monitoring Offices	• Monitoring the real time performance of the CQCN; • Producing 4 hourly reporting to the business, customers and regulator; and • Reporting to the business managers.
Safe Workings Supervisor	• Supervising the network controllers and Electric Control offices who operate the boards covering all 4 systems of the network; and • Point of escalation for Network Controllers in the event of managing an incident.
Electrical Control Officers & Fault Co-ordinators	• Managing the control boards for the electrical systems in real time; and • Reporting to the safe working supervisors.
Area Controllers	• Managing the network control boards for the Aurizon Network yards in real time; • Executing the plan for the shift and implement any ad-hoc operational changes; and • Report to the safe working supervisors
Network controller	• Managing the nine network control boards for the four coal systems; • Safely control the on track movements across the CQCN; • Facilitate the protection of asset maintenance personnel and provide access to parts of the network for maintenance activities.

* as advised by Aurizon Network

8.145 Aurizon Network has advised that FTE numbers allocated to below rail activities for the train control, safe workings and operations division totalled [redacted] for the year ended 30 June 2013.

8.146 Aurizon Network has allocated 91% of costs in relation to the operation of the train control centre in Rockhampton to below rail operations on the basis that there is a proportion of rail traffic relating to non-coal operations. The 91% allocation is based on the average train kilometres for non-coal operations as a proportion of total train kilometres. We consider that the above does not appear unreasonable.

8.147 The table below summarises the actual train control, safe working and operations costs of Aurizon Network for the 4 years ended 30 June 2013 and the forecast system wide costs for the UT4 period in terms of absolute dollars and on a $/train path basis.

Consolidated Network Operations/Opex Costs	Year ending 30 June 2010 Actual $'000	Year ending 30 June 2011 Actual $'000	Year ending 30 June 2012 Actual $'000	Year ending 30 June 2013 Actual $'000	Year ending 31 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
Train Control, Safeworking and Operations								
Network Operations South								
Manager Integrated Business Systems	8,773	1,952	893	706	883	923	965	1,006
Planning and Production GM South	255	2,315	1,064	608	1,421	1,474	1,529	1,583
Capricornia Coal Chain IPC	1,311	1,621	1,579	1,408	1,678	1,762	1,848	1,932
Coal Yards Callemondah	1,548	1,997	1,924	1,800	1,636	1,718	1,803	1,886
Train Control Centre Rockhampton	7,107	8,899	15,874	16,885	19,141	20,117	21,124	22,096
Network Planning Production & Costs	-	375	386	21	-	-	-	-
Network Operations North								
Planning and Production GM North	-	-	433	595	873	908	944	979
Goonyella Coal Chain IPC	2,505	2,925	2,428	1,611	1,578	1,654	1,733	1,809
Coal Yards Mackay	1,343	2,038	923	1,559	1,187	1,247	1,308	1,368
Train Control Centre Mackay	5,554	4,989	673	931	1,529	1,607	1,686	1,765
Utilities Costs	689	1,198	1,219	19	1,207	1,238	1,268	1,300
	29,085	28,209	27,396	26,143	31,133	32,648	34,210	35,724
Add: estimated utility costs - 30 June 2013	-	-	-	1,230	-	-	-	-
Normalised total costs	29,085	28,209	27,396	27,373	31,133	32,648	34,210	35,724
Year on Year % change in cost		(3.0%)	(2.9%)	(0.1%)	13.7%	4.9%	4.8%	4.4%
Train paths	48,576	41,145	40,366	43,292	47,372	52,832	56,272	60,676
	$	$	$	$	$	$	$	$
$/train path	599	686	679	632	657	618	608	589
Year on Year % change in cost		14.5%	(1.0%)	(6.9%)	4.0%	(5.9%)	(1.6%)	(3.1%)
$/train path based on 10% reduction in forecasts	599	686	679	632	730	687	675	654
Year on Year % change in cost		14.5%	(1.0%)	(6.9%)	15.5%	(5.9%)	(1.7%)	(3.1%)

Source: Aurizon Network historical and forecast reports and RSMBC Calculations
Costs expressed in nominal dollars

8.148 In absolute $ terms, normalised costs have marginally reduced over the UT3 period, primarily as a result of reductions in employee costs over the UT3 period.

8.149 During the year ended 30 June 2012, the Mackay and Rockhampton train control centres were merged with the Mackay train control centre maintained for disaster recovery and training purposes.

8.150 Aurizon Network has stated in Volume 3 of the UT4 Draft Access Undertaking that this has resulted in more efficient train control costs, including:

- an improvement in asset utilisation;
- lower staff costs;
- lower production costs; and
- lower labour on-costs

8.151 The above costs savings are not evidenced in the actual costs for the Rockhampton and Mackay train control costs (combined) as set out in the table below.

Queensland Network Operations Opex Costs	Year ending 30 June 2010 Actual $'000	Year ending 30 June 2011 Actual $'000	Year ending 30 June 2012 Actual $'000	Year ending 30 June 2013 Actual $'000	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
Network Operations South								
Train Control Centre Rockhampton	7,107	8,899	15,974	16,885	19,141	20,117	21,124	22,096
Train Control Centre Mackay	5,554	4,989	573	931	1,529	1,607	1,688	1,765
Total	12,661	13,888	16,547	17,816	20,670	21,724	22,812	23,861
Year on Year % increase		9.7%	19.1%	7.7%	16.0%	5.1%	5.0%	4.6%

Source: Aurizon Network historical and forecast reports and RSMBC Calculations
Costs expressed in nominal dollars

8.152 Total train control centre costs increased by 19.1% for the year of consolidation (30 June 2012) compared to the year ended 30 June 2011.

8.153 Aurizon Network subsequently advised that

- consolidation of the two train control centres did not lead to a reduction in FTEs, as two extra Control Boards were created to address long standing workload (safety) issues and to manage the increased tonnages;
- in 2011, Lloyds Register technical consultants were engaged to provide an assessment of train controller workload (based on tonnages at that point in time) prior to the consolidation to the Mackay control centre to Rockhampton. Outcomes from this assessment resulted in the creation of two extra control boards (Gregory board and Ports board) which occurred as a part of the consolidation in 2011; and
- the density of trains and complexity of infrastructure drives the number boards required. This, in turn, then dictates the number of FTEs required to control each board with a roster of FTEs is required for 24/7 coverage.

8.154 Train control, safe working and operations costs are forecast to increase during the year ending 30 June 2014 by 13.7% compared to the year ended 30 June 2013 (from $27.4 million to $31.1 million).

8.155 The movement in costs is primarily a result of:

- increased labour costs in real terms of circa $2.2 million in relation to forecast increases in FTE numbers (increase of circa 24 FTEs). Aurizon Network has advised that the train control function has been operating at below optimal staffing levels in previous years with a number of positions being vacant. The year ending 30 June 2014 forecast costs assume that these vacancies will be filled; and

- forecast costs include $0.6 million for security costs related to trespass incidents in yards. Actual costs for these incidents amounted to $0.3 million in the year ended 30 June 2012 and $nil in the year ended 30 June 2013.

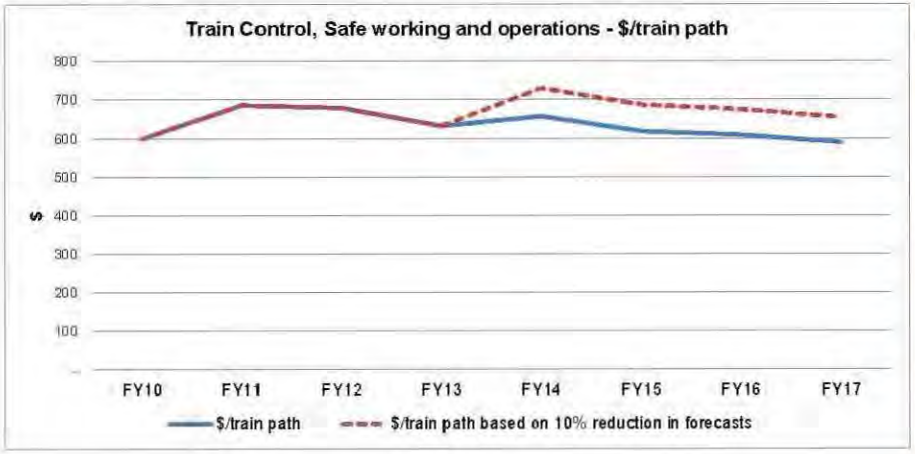
8.156 We have been advised by Aurizon Network that the increased FTE number requirement reflects the increased complexity of the CQCN with the train control centre required to manage the expectations of a larger number of stakeholders to provide flexible and efficient operations.

8.157 We are unable to assess the reasonableness of the proposed increased FTE numbers from a desk top review. However, we note that the increase in costs is consistent with the forecast increase in volume and forecast increase in contracted volume. We do not consider it unreasonable to expect an increase in volume to result in some increase train control costs.

8.158 Given the historical security costs incurred in relation to trespass incidents, we consider that it would be reasonable to reduce the forecast costs to reflect the reduction in actual costs incurred during the year ended 30 June 2013. We consider that a forecast cost for the year ending 30 June 2014 of $154,000 would not be unreasonable representing the CPI adjusted average cost for the years ended 30 June 2012 and 30 June 2013.

$/train path

8.159 Costs on a $/train path basis are set out in the chart below.



8.160 Over the UT3 period, train control, safe working and operational costs expressed as $/train path rose in FY11 compared to FY10 due to a decrease in train path numbers. $/train path costs then fell over remainder of the UT3 period primarily as a result of a result of train path number increases.

8.161 $/train path costs are forecast to increase in FY14 compared to FY13 as a result of the increase in forecast costs in FY 14 relating to the increase in forecast FTE numbers.

8.162 $/train path costs are forecast to then decrease over the remainder of the UT4 forecasts period as a result of forecast train path number increases.

Infrastructure Management

8.163 The infrastructure management division is responsible for the performance of those assets that are part of the CQCN.

8.164 The main activities performed are:

- asset business management;
- asset assurance management;
- electrical assets management;
- telecommunications and signalling assets management;
- track and civil assets management;
- asset strategy; and
- corridor assets management.

8.165 The division is also responsible for network maintenance and renewals.

8.166 The divisional costs primarily related to labour and associated on-costs which comprised circa 67% of the costs for the year ended 30 June 2013.

8.167 Aurizon Network has allocated 76% of costs in relation to the infrastructure management divisional costs to below rail operations on the basis that a proportion of costs relate to maintenance activities and capital expenditure. This allocation is based on an analysis of timesheets of staff for the 2012/13 financial year. We consider that the above does not appear unreasonable.

8.168 The table below summarises the actual infrastructure management costs of Aurizon Network for the 4 years ended 30 June 2013 and the forecast system wide costs for the UT4 period in terms of absolute dollars and on a $/train path basis.

Network Operations Operating Costs - Normalised	Year ended 30 June 2010 Actual $'000	Year ended 30 June 2011 Actual $'000	Year ended 30 June 2012 Actual $'000	Year ended 30 June 2013 Actual $'000	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
Infrastructure Management								
Telecommunications Backbone	4,220	11,067	12,872	1,875	929	952	976	1,001
Network Assets	968	1,074	1,472	2,055	1,821	1,894	1,770	1,848
GM Assets	4,282	1,409	1,151	477	1,583	1,629	1,676	1,724
Mgr Commercial	461	416	1,005	1,715	1,491	1,489	1,548	1,608
Track and Civil Systems	3,618	712	933	1,729	2,097	2,188	2,281	2,373
Mgr Signalling and Corp Systems	7,156	907	1,114	2,719	2,234	2,341	2,462	2,559
Mgr Electric Assets	1,164	1,479	1,395	2,338	1,854	1,937	2,022	2,105
Mgr Assets Strategy	-	93	596	925	1,223	1,284	1,347	1,408
Mgr Assurance	-	381	563	2,001	1,606	1,688	1,771	1,852
Nwk Track and Civil Assets	-	130	100	237	294	309	324	339
SVXP Nwk Elec Assets	-	87	8	-	-	-	-	-
Nwk Assets Assurance	-	173	101	-	4	4	4	5
EGM QR Network	3,345	2,072	2,145	745	1,058	1,114	1,170	1,223
	25,214	20,002	23,446	16,815	15,934	16,629	17,349	18,039
Normalisation adjustments:								
Remove telephone communication back bone costs - excluded in UT4 forecasts	(2,479)	(9,283)	(11,043)	-	-	-	-	-
	22,735	10,719	12,403	16,815	15,934	16,629	17,349	18,039
Year on Year % change in cost		(52.9%)	15.7%	35.6%	(5.2%)	4.4%	4.3%	4.0%
Train paths	48,576	41,145	40,388	43,292	47,372	52,832	56,272	60,676
	$	$	$	$	$	$	$	$
$/train path	468	261	307	388	336	315	308	297
Year on Year % change in cost		(44.0%)	18.0%	26.0%	(13.0%)	(6.0%)	(2.0%)	(4.0%)
$/train path based on 10% reduction in forecasts	468	261	307	388	374	350	342	330
Year on Year % change in cost		(44.0%)	18.0%	26.0%	(4.0%)	(6.0%)	(2.0%)	(4.0%)

Source: Aurizon Network historical and forecast reports and RSMBC Calculations
Costs expressed in nominal dollars

8.169 In absolute $ terms, infrastructure management costs decreased by 52.9% during the year ended 30 June 2011 compared to the year ended 30 June 2010 as a result of the year ended 30 June 2010 including costs related to the separation of Aurizon Network from Queensland Rail (primarily consumables, signalling hardware and computer components, and employee costs).

8.170 Infrastructure management costs increased by 15.7% for the year ended 30 June 2012 compared to the year ended 30 June 2011. The increase primarily arose as a result of:

- the creation of a new area – network asset strategy within the infrastructure management division incurring costs of circa $500,000; and
- consultancy costs in relation to the UT4 operating expenditure and maintenance submission amounting to circa $500,000.

8.171 Infrastructure management costs increased by 35.6% for the year ended 30 June 2013 compared to the year ended 30 June 2012. The increase primarily arose as a result of Aurizon Network restructuring and including additional costs of circa $5.5 million in relation to the engineering and compliance function within infrastructure management costs instead of asset maintenance costs.

8.172 The engineering and compliance functions consist of civil engineers who, inter-alia, monitor the operational data and asset performance of the Network, are responsible for compliance with railway technical standards and specifications and provide input into the Network asset plans. These civil engineers operate across the following disciplines:

- track and civil;
- structures;
- telecoms;
- signalling; and
- traction.

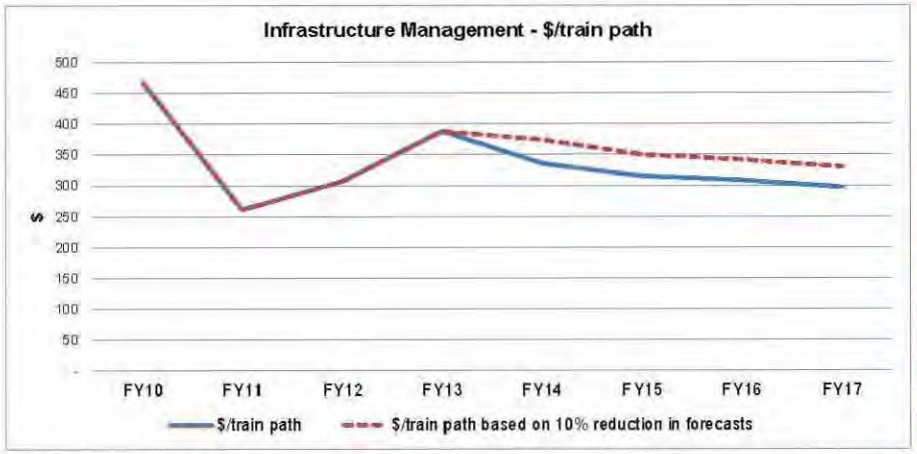
8.173 We recommend that the QCA ensures that the reclassification of these costs into system wide direct operating expenses has resulted in an appropriate reduction in maintenance costs to ensure that these costs are not duplicated.

8.174 Infrastructure management costs are forecast to decrease by 5.2% during the year ending 30 June 2014 compared to the year ended 30 June 2013 as a result of a forecast reduction in employee numbers during the year.

8.175 The increases over the remainder of the UT4 period represent CPI at 2.5% and wage inflation based on wage inflation estimates provided to Aurizon Network by BIS Shrapnel.

$/train path

8.176 Costs on a $/train path basis are set out in the chart below.



8.177 Over the UT3 period, infrastructure management costs expressed as $/train path fell in FY11 compared to FY10 due to the decrease costs in FY 11. $/train path costs then increased over remainder of the UT3 period due to the cost increases as discussed in paragraphs 8.170 and 8.171.

8.178 $/train path costs are forecast to decrease over the UT4 period.

8.179 This does not appear unreasonable, as we would expect infrastructure management costs to remain relatively fixed compared to the volume of traffic on the CQCN.

Business Management

8.180 The business management division broadly comprises teams undertaking the following tasks.

Commercial Planning

8.181 Commercial planning is responsible for the development and implementation of capital projects, including ensuring investments are subject to required internal governance and approvals process.

8.182 It is also responsible for managing the contractual interface for electric transmission and distribution network capacity, as well as expansions and managing any pre-approval of capital expenditure sought from users under the regulatory voting provisions.

8.183 The commercial planning division currently comprises 7.8 FTE positions[31].

Commercial Management North and South

8.184 These teams are the primary interface between Aurizon Network and users for matters relating to the negotiation and provision of access, including where expansions are required.

8.185 The commercial management division currently comprises of 15.2 FTE positions[31].

[31] Source: Aurizon Network

Planning and Development

8.186 Planning and development is responsible for Aurizon Network's strategic network planning function (medium to long-term planning), maintenance of the network operating parameters, capacity modelling, interacting with other supply chain participants and developing and participating in initiatives that could improve supply chain performance.

8.187 The division currently comprises 11.8 FTE positions[31].

Regulation and Policy

8.188 The regulation and policy division provides advice on regulatory matters, monitors and reports on compliance with the Access Undertaking, liaises with the QCA on behalf of Aurizon Network, and assists other areas within Aurizon Network to comply with their undertaking obligations.

8.189 Aurizon Network has advised that the costs of the activities that are performed within this area are cyclical with an increase in cost budgeted for 2015/16 and 2016/17 associated with the development and review of UT5.

8.190 Business management divisional costs primarily relate to labour and associated on-costs. Labour and associated on-costs comprised circa 82% of the commercial planning, commercial management and planning and development divisions costs for the year ended 30 June 2013.

8.191 Aurizon Network has allocated 87% of costs in relation to the business management divisional costs to below rail operations on the basis that a proportion of costs relates to non-regulated activities. This allocation is based on the proportion of non-regulated revenue generated by Aurizon Network as a proportion of total revenue. We consider that the above does not appear unreasonable.

8.192 The table below summarises the actual business management costs of Aurizon Network for the 4 years ended 30 June 2013 and the forecast costs for the UT4 period in terms of absolute dollars and on a $/train path basis.

Network Operations Operating Costs - Normalised	Year ended 30 June 2010 Actual $'000	Year ended 30 June 2011 Actual $'000	Year ended 30 June 2012 Actual $'000	Year ended 30 June 2013 Actual $'000	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
Business Management								
GM Coal	1,383	740	1,104	956	1,162	1,214	1,267	1,319
Regulation & Policy	2,189	2,771	2,191	3,123	1,947	1,982	4,565	3,784
GGM Commercial Development	2,390	1,380	1,330	1,324	1,803	1,930	2,032	2,149
Network Planning	1,512	459	14	4	2	2	2	2
Coal Commercial North	2,008	2,230	1,049	945	1,350	1,404	1,442	1,495
Coal Commercial South	-	-	709	1,137	1,503	1,564	1,606	1,666
Major Products	631	1,384	1,813	2,139	2,745	2,857	2,934	3,042
	10,113	**8,964**	**8,210**	**10,628**	**10,512**	**10,953**	**13,848**	**13,457**
Year on Year % change in cost		(11.4%)	(8.4%)	29.5%	(1.1%)	4.2%	26.4%	(2.8%)
Train paths	**48,576**	**41,146**	**40,366**	**43,292**	**47,372**	**52,832**	**56,272**	**60,676**
	$	$	$	$	$	$	$	$
$/train path	**208**	**218**	**203**	**246**	**222**	**207**	**246**	**222**
Year on Year % change in cost		4.8%	(6.9%)	20.7%	(9.4%)	(6.8%)	18.8%	(9.8%)
$/train path based on 10% reduction in forecasts	**208**	**218**	**203**	**245**	**247**	**230**	**273**	**246**
Year on Year % change in cost		4.8%	(6.9%)	20.7%	0.8%	(6.9%)	18.7%	(9.9%)

Source: Aurizon Network historical and forecast reports
Costs expressed in nominal dollars

8.193 In absolute $ terms, business management costs decreased by 11.4% during the year ended 30 June 2011 compared to the year ended 30 June 2010 as a result of the year ended 30 June 2010 including costs related to the separation of Aurizon Network from Queensland Rail (primarily consumables and employee costs).

8.194 Costs reduced by a further 8.4% during the year ended 30 June 2012 compared to the year ended 30 June 2011 primarily as a result of:

- the reclassification of costs in relation to a QCA Levy from regulation and policy costs into the respective system direct cost centres of circa $500,000; and
- a reduction in commercial management costs following a restructure from 1 division into 2 divisions (North and South).

8.195 Costs increased by 29.5% during the year ended 30 June 2013 compared to the year ended 30 June 2012 primarily as a result of increased professional fees of circa $2 million incurred by the regulation and policy team in relation to preparation work for the UT4 Draft Access Undertaking.

8.196 Costs are forecast to decrease by 1.1% during the year ending 30 June 2014 compared to the year ended 30 June 2013. The movements in expenditure relate to:

- a decrease in regulation and policy costs of circa $2 million as a result of UT4 related costs being a one off cost in the prior year; and
- an increase in commercial planning and commercial management employee costs to account for additional employees as there were vacant positions during the 2013 financial year that are forecast to be filled.

8.197 We are unable to assess the reasonableness of the proposed increased FTE numbers from a desk top review. We note, however, that an increase in network size/volume may result in some step changes in business management costs.

8.198 Over the remainder of the UT4 period, business management costs are forecast to increase by CPI and wage inflation factors other than the following one off additional costs in regulation and policy related to the forecast costs for development of the UT5 Draft Access Undertaking:

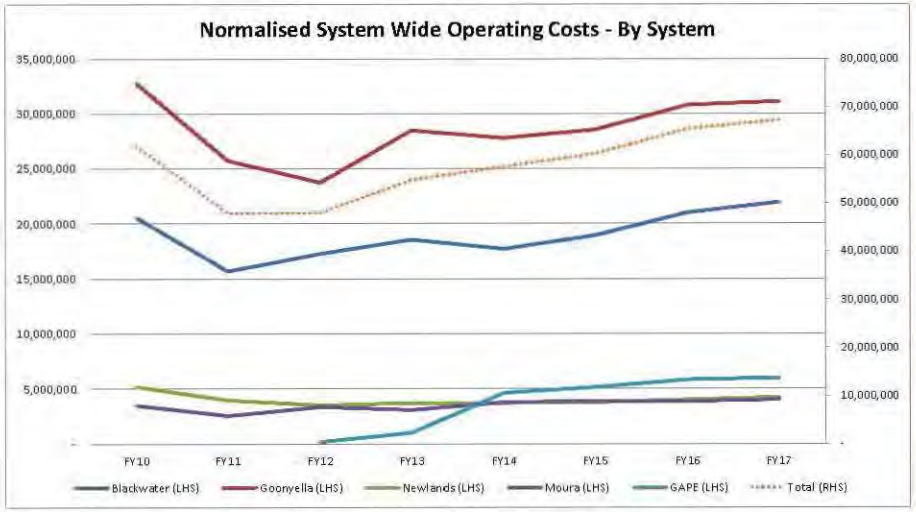
- $2.5 million in the year ending 30 June 2016; and
- $2.0 million in the year ending 30 June 2017.

8.199 We note that the above costs are consistent with the costs incurred to date by Aurizon Network for the preparation of UT4 of $4.8 million. On the basis that the preparation of UT5 is anticipated to require a slightly lower level of costs and taking into account inflation, the forecast costs do not appear unreasonable.

Analysis of costs by system

8.200 The charts below summarise the actual normalised total system wide costs allocated by system for the 4 years ended 30 June 2013 and the forecast normalised total system wide costs allocated by system for the UT4 period in terms of:

- absolute dollars
- $/train path (Aurizon Network forecasts); and



(Note: GAPE system commenced operation and incurring allocation of costs in FY12)

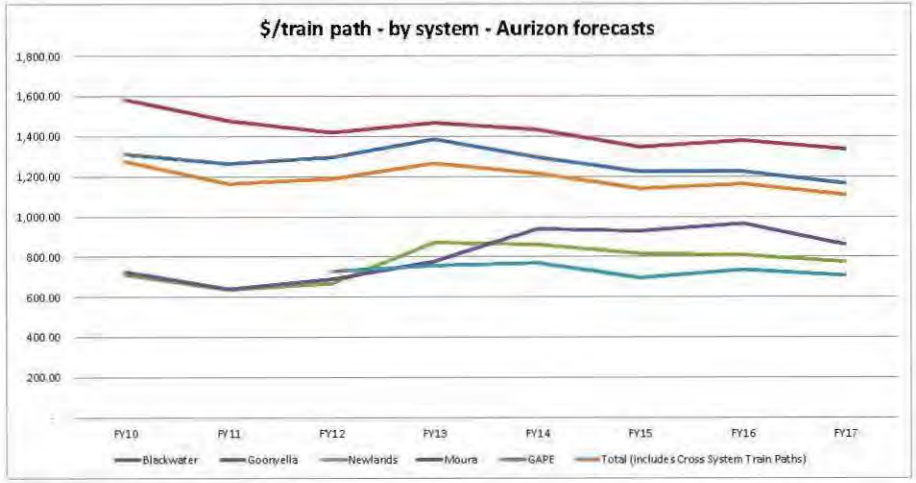
8.201 The percentage of total system wide direct costs allocated to each system has remained relatively stable over the UT4 period other than:

- an increased allocation of costs to GAPE in the year ended 30 June 2014 and beyond with a proportional reduction in the allocation to other systems; and
- increases in allocation of costs to Blackwater of circa 1% to 2% with a matching reduction of allocation of costs to Moura.

8.202 The changes in the percentage allocation of costs to each system are broadly in line with the forecast volume changes for each system and therefore, do not appear reasonable.

8.203 Consequently, with the exception of the FY13 movement for GAPE, each system's absolute $ costs broadly follow the trend in total system wide direct costs.

$/train path



(Note: GAPE system commenced operation and incurring allocation of costs in FY12)

8.204 The $/train path costs for all systems other than Moura are forecast to decrease marginally over the UT4 period.

8.205 $/train path costs in relation to the Moura system are forecast to increase from $778 in the year ended 30 June13 to $939 in the year ending 30 June 2014 as a result of there being only marginal volume increases for this system compared to the 13.7% forecast increase in costs.

Consideration of Stakeholder Submissions

8.206 No stakeholder submissions were identified that were relevant to the scope of the high level review of system wide direct costs.

Conclusion – System Wide Direct Costs

8.207 Based on our high level review of system wide direct costs, we consider that the following adjustment should be made:

- a reduction of $446,000 per annum (in 2013/14 dollars) in relation to forecast security costs in relation to trespass incidents, to reflect the actual costs incurred during the year ended 30 June 2012 compared to forecast.

8.208 We also note that Aurizon Network is forecasting an increase in FTE numbers and employee costs for the year ending 30 June 2013 in:

- the train control centre - additional $2.2 million; and
- commercial development and commercial planning – additional $1.7 million.

8.209 We are unable to assess the reasonableness of the proposed increased FTE numbers from a desk top review. We note, however, that the forecast increase in network size/volume may result in certain step changes in train control and business management costs which could justify the proposed increases.

9. Task 3.2.6 – Total Cost Benchmarking

Scope

9.1 RSMBC has been requested by QCA to benchmark Aurizon Network's total operating expenses against its historic performance and similar companies.

9.2 As part of the above process, RSMBC has been requested by QCA to consider relevant submissions from QRC, Asciano, BMA and BMC and RTCA.

Work undertaken by RSMBC

9.3 The approach adopted for benchmarking Aurizon Network's total operating expenses is consistent with the approach outlined in section 8 of this report.

9.4 For the purpose of this exercise, "Operating Costs" are defined as:

- Train control (costs including safe working and operations administration);
- Infrastructure management (costs of infrastructure management which include telecommunications, engineering and research & development activities); and
- Business management (costs related to regulation and policy, master planning, new business and major projects activities).

9.5 "Overheads Costs" are defined as the Corporate Overheads within the Aurizon Holdings group that are allocated to below rail activities, as discussed in Section 3 of this report.

9.6 The benchmarking analysis has benchmarked costs based on the basis of:

- total absolute dollars;
- $/track km
- $/train path (where information is available);
- $/GTK (forecast); and
- $/GTK (contracted);

9.7 Aurizon Network's costs have been benchmarked on contracted volumes in addition to forecast volumes on the basis that Aurizon Network is required to be in a position to resource to contract or peak capacity levels.

Compare the final year UT3 actual total cost (Operating + Overhead) to the first year UT4 forecast

9.8 The table below sets out the actual operating costs and GTK for the final UT3 year (the year ended 30 June 2013) and forecast operating costs and GTK for the first year of UT4.

	UT3 (2012/2013)	UT3 (Adjusted to 2013/2014)	UT4 (2013/2014)	% change
GTK (million)	71,572	71,572	80,513	12.5%
Operating Cost ($ million)	54.815	57.010	57.579	1.0%
Overhead Cost ($ million)	63.470[32]	65.691	65.973	0.4%
Total Cost ($ million)	**118.285**	**122.701**	**123.552**	**0.7%**
Track Km	2,667	2,667	2,667	-
Total Cost / Track Km	$45,670	$47,375	$47,703	0.7%
Train Path	43,292	43,292	47,372	9.4%
Total Cost / Train Path	$2,732	$2,834	$2,608	(8.0%)
GTK (forecast) (million)	71,572	71,572	80,513	12.5%
Total Cost/ forecast GTK (cents)	0.165	0.171	0.153	(10.5%)

[32] Source: Aurizon Network 2012/13 overhead allocation calculation utilised as the basis for the UT4 corporate overhead allocation

9.9 The above analysis assumes that a consistent corporate overhead allocation methodology is applied in 2012/13 to the proposed methodology for UT4.

9.10 Adjusting the final year of UT3 costs to 2013/14 dollars based on applying CPI of 2.5%[33] to non-labour costs and a labour indexation factor of 4.5%[2] to labour costs results in an increase in real terms between the final year of UT3 and the initial year of UT4 of 0.7%.

9.11 We note that Aurizon Network forecasts an increase in GTK volumes of 12.5% between the final year of UT3 and the first year of UT4.

9.12 We consider that the nature of Operating Costs and Overhead Costs within a business such as Aurizon Network, would be largely fixed in nature. Any increases in costs would likely be 'step changes' caused by increases in volumes or Network size constraining a function to above its current capacity.

9.13 Costs on a $/train path basis are forecast to decrease 8.0% in real terms between the final year of UT3 and the first year of UT4. Costs on a $/forecast GTK basis are forecast to decrease 10.5% in real terms between the final year of UT3 and the first year of UT4.

9.14 In the context of the forecast increase in volume, a 0.7% real increase in operating expenses does not appear unreasonable.

[33] Based on indexation factors used by Aurizon Network and set out in Volume 3 of the 2013 Draft Access Undertaking

Benchmark to other comparable rail access providers using publicly available information

9.15 Details of the comparative operations identified, the sources of information utilised, and the limitations in respect of the data available are set out in Section 8, paragraphs 8.5 (Page 90) to 8.16 (Page 92) of this report.

9.16 The limitation outlined in paragraphs 8.5 to 8.15 of this report should be considered when assessing the results of the benchmarking exercise.

9.17 In addition to the operational differences outlined in paragraphs 8.5 to 8.15 of this report it should be noted that Aurizon Network is part of a larger group with shared corporate services. Therefore, when benchmarking Overhead Costs against comparable entities, consideration also needs to be given to Aurizon Network having access to synergistic cost savings from its shared corporate services which would not be available to comparable, stand-alone companies, which are smaller in size than the Aurizon Holdings group.

9.18 No adjustments were made to reflect differences in operations or structure between the selected comparatives. This would entail further detailed analysis. Therefore, the comparatives can only be considered indicative.

9.19 The following table summarises the results of the benchmarking exercise.

	UT4 (2013/14 forecast)	Brookfield Rail (2009 adj)	ARTC Hunter Valley (Avg 2013/14 forecast)
Operating Cost ($ million)	57.579	14.330	29.730
Overhead Cost($ million)	65.973	20.854	16.671
Total cost ($ million)	**123.552**	**35.184**	**46.401**
Track Km (estimated)	2,667[34]	1,997[35]	1,336[36]
Total Cost / Track Km	$46,326	$17,618	$34,731
Forecast GTK (million)	80,513	23,532	43,309
Total Cost / Forecast GTK (cents)	0.153	0.150	0.107
Contract GTK (million)	107,138	N/a	43,309
Total Cost / Contracted GTK (cents)	0.115	N/a	0.107

(2013/14 dollars)

9.20 The above shows a much higher Total Cost per Track Km for UT4 than applies for both Brookfield Rail and ARTC (Hunter Valley) operations.

9.21 Aurizon Network's Total Cost per track km is 37% higher than ARTC (Hunter Valley), with the difference driven largely by the difference in Overhead costs.

[34] Source: Aurizon Network

[35] Source: ARTC Hunter Valley business presentation dated March 2012

[36] Source: Economic regulation Authority, WA, Final Determination on the Proposed 2009-2010 Floor and Ceiling Costs (30 June 2009).

9.22 Aurizon Network's Total Cost per Forecast GTK is 43% higher than ARTC (Hunter Valley), with the difference again driven largely by the difference in Overhead Costs.

9.23 Aurizon Network's Total Cost per Contracted GTK is 7.5% higher than ARTC (Hunter Valley). Indicating that the costs of Aurizon Network and ARTC (Hunter Valley) would be more closely aligned if volumes were operating at 100% contracted levels and there was no consequential increase in costs to Aurizon Network.

9.24 A more detailed operational analysis of Aurizon Network's operations and structure would be required to ascertain the impact on Aurizon Network's costs of being required to be in a position to resource to contract or peak capacity levels.

9.25 Compared to Brookfield Rail, Aurizon Network's Total Cost per Track Km is 171% higher. However, on a Total Cost per GTK Aurizon Network's Total Cost per GTK is only 2.7% higher.

9.26 Without further analysis of all of the benchmark entities, we are unable to ascertain the detailed reasons for such a difference. However, it is reasonable to question why Aurizon Network's Total Costs (particularly on a $/Track Km basis) are higher than the other two comparative operations.

Indicative "shadow" benchmark

9.27 In establishing the indicative "Shadow" benchmark, with the assistance rail industry experts engaged by RSMBC as part of our review, we have:

- estimated the number of staff and average labour costs required based on functions, as a below rail / infrastructure manager, to manage the CQCN business as a standalone entity together with associated running costs. This is based on the experience of the rail industry experts in leadership and executive management roles on railways; and
- tested the reasonableness of the above using confidential information from comparable railways to which our rail industry experts have access. Due to the confidential nature of the information utilised, we are unable to disclose the details of these comparable railways.

9.28 A number of adjustments were applied to the "base" cost model developed in order to reflect the current operational structure of Aurizon Network.

9.29 The key adjustments within Operational Costs reflected:

- additional staff required due to the largely manual operation and management of yards;
- duplication and impact of remoteness of operation of control rooms; and
- higher level of activity apparent in Health, Safety & Environmental costs than is assumed as being required for a similar sized operator.

9.30 Key adjustments within the Overhead Costs reflected:

- legal costs increased to reflect what appears to be a particularly large cost category for an established below rail operator;
- rent, rates and taxes to reflect the actual costs incurred by Aurizon Network within the Brisbane CBD;
- IT costs increased to reflect a higher fixed cost structure and the classification of telecommunication backbone expenses within corporate overheads; and
- high cost of Health, Safety and Environmental activities (as a consequence of Aurizon Network's safety commitment and performance and commitment to discharging obligations on coal loss management).

9.31 We consider that the above matters may represent opportunities where future operational expenditure savings may potentially be generated.

9.32 The Shadow operator comparatives are adjusted to reflect the same track length, UT4 GTK and costs in 2013/2014 dollars.

Benchmark summary

9.33 The table below sets out a comparison of the 2013/14 UT4 forecast and the indicative "Shadow" benchmark.

	Indicative Shadow	UT4 (2013/14 forecast)	UT4 v Indicative Shadow
Track Km	2,667	2,667	-
Operating Cost ($ million)	52.83	57.58	9.0%
Overhead Cost ($ million)	40.24	65.97	63.9%
Total Cost ($ million)	**93.07**	**123.55**	**32.8%**
Operating Cost / Track Km	$34,897	$46,325	32.8%
Train Paths	47,372	47,372	-
Total Cost / Train Path	$1,965	$2,608	32.8%
Forecast GTK (million)	80,513	80,513	-
Total Cost / Forecast GTK (cents)	0.116	0.153	32.8%
Contract GTK (million)	107,138	107,138	-
Total Cost / Contracted GTK (cents)	0.087	0.115	32.8%

(2013/14 dollars)

9.34 This comparative shows a material difference. The difference primarily relates to Overhead Costs.

9.35 We note that there is a 9.0% difference in relation to Operating Costs. We also consider, as previously discussed in section 8, that there may be a number of areas within Operating Costs where there expenditure savings could potentially be generated.

9.36 The proposed UT4 Overhead Costs are 63.9% higher than the indicative "Shadow" benchmark. However, this may be as a result of there being some aspects of Aurizon Network's operations that may have not been fully accounted for in the establishment of the indicative "Shadow"

9.37 The indicative "Shadow" was developed as a "standalone" operation and the Aurizon Network operation is part of a much larger business with shared services support provided throughout. Shared service overhead cost centres should, generally, be more cost effective than standalone dedicated cost centres.

Consideration of Stakeholder Submissions

QRC, BMA/BMC & RTCA – Use of ARTC as a benchmark entities

9.38 QRC BMA/BMC have submitted that ARTC should be utilised as a benchmark because ARTC is a very similar business to Aurizon Network and that cost information on ARTC publicly available through regulatory processes.

9.39 RTCA has also recommended that ARTC along with Queensland Rail should be utilised as benchmarks.

RSMBC Comments

9.40 RSMBC has utilised ARTC (Hunter Valley) as a comparable benchmark entity. In considering the results of this benchmarking, the factors outlined in paragraphs 8.8 (page 90) to 8.14 (page 91) need to be considered.

9.41 RSMBC has not utilised Queensland Rail on the basis that Queensland Rail's operations include a significant proportion of passenger transit and is therefore not as directly comparable.

Conclusion

9.42 This benchmarking exercise has a number of constraints that need to be recognised. In particular, that quality and level of information for the comparative below rail access providers is limited. There are a number of operational differences as outlined in paragraphs 8.5 to 8.15 and paragraph 9.17 that will impact on the costs of Aurizon Network compared to the comparable entities.

9.43 The key points noted from our benchmarking of operational expenditure were:

- Aurizon Network has a significantly higher Total Cost per Track Km and per GTK than the comparable benchmark entities and the indicative "Shadow" Benchmark;
- Aurizon Network's Total Cost per Contracted GTK is 7.5% higher than ARTC (Hunter Valley). Indicating that the costs of Aurizon Network and ARTC (Hunter Valley) would be more closely aligned if volumes were operating at 100% contracted levels and there was no consequential increase in costs to Aurizon Network;
- the primary difference between Aurizon Network and the comparable benchmark entities and the indicative "Shadow" Benchmark related to Overhead Costs;

9.44 Based on a desktop benchmarking exercise, the ability to drill down further is limited. However, based on the benchmarking undertaken, the proposed UT4 Total Costs appear higher than the benchmark entities.

10. Task 3.2.7 – Detailed Review of Forecast Operating Expenditure

Scope

10.1 RSMBC has been requested by QCA to:

- assess Aurizon Network's forecast operating expenditure to ensure that the forecast cost does not reflect:
  - costs that are also included in other operating expenditure categories (i.e. there is no 'double-counting');
  - operating expenditure associated with Aurizon Holdings Limited's above-rail activities;
  - other costs (e.g. overheads) associated with specific capital works projects, which are the subject of separate applications to the Authority; or
  - any other source of double-counting the consultant may identify.
- adjust Aurizon Network's forecast cost to remove any double-counting (if applicable), as identified;
- benchmark Aurizon Network's forecast operating expenditure (using the adjusted forecast cost, if applicable) against the operating expenditure of relevant industry comparators for efficiency;
- identify and explain any difference between the (adjusted) forecast cost and the benchmark cost;
- determine whether or not Aurizon Network's (adjusted) forecast cost is reasonable and:
- if not reasonable, determine a reasonable forecast for the cost category with reference to the analysis and provide its reasoning.
- determine whether Aurizon Network's forecast operating expenditure includes an adjustment to reflect productivity improvements over the regulatory period (e.g. x-factor or other adjustment):
  - if Aurizon Network has not proposed an adjustment to reflect productivity improvements, assess whether or not this assumption is reasonable based on relevant factors (e.g. forecast volumes / capital expenditure) ; or
  - if Aurizon Network has proposed an adjustment to reflect productivity improvements, assess the reasonableness of that adjustment taking into account relevant factors (e.g. forecast volumes / capital expenditure); and
  - in either case, confirm the reasonableness, or not, of Aurizon Network's proposal. If Aurizon Network's proposal is unreasonable, determine an appropriate adjustment to Aurizon Network's forecast operating expenditure to reflect productivity improvements.

10.2 As part of the above process, RSMBC has been requested by QCA to consider relevant submissions from QRC, Asciano, BMA and BMC and RTCA.

Work undertaken by RSMBC

10.3 We have performed the following procedures:

- obtained an understanding of the forecast model used by Aurizon Network to forecast operating costs;
- obtained an understanding of the key assumptions and underlying build-up methodology within the forecast model;
- undertaken a detailed review of the underlying build-up methodology to identify:
  - any double-counting of costs;
  - any costs which may either in full, or in part, relate to Aurizon Holdings Limited's above-rail activities;
- reviewed the forecasts for any capital works projects that could be the subject of applications to the Authority;
- reported any exceptions noted from the above review and prepared an adjusted Aurizon Network operating expenditure forecast to amend the impact of any exceptions noted;
- benchmarked the amended Aurizon Network's forecast operating expenditure against relevant industry comparators for efficiency on the same basis as outlined for sub-task 3.2.5 (section 8 of this report).
- reviewed past operating/maintenance cost submissions for previous regulatory periods;
- reviewed productivity improvements evident in Access Agreements of comparable below rail operators;
- from the above assessed an x - factor in terms of what we consider to be reasonable productivity improvements; and
- compared our assessed x - factor against productivity improvements reflected with Aurizon Network's submission for the UT4 period;

RSMBC Findings

Assessment of Aurizon Network's forecast operating expenditure

10.4 The issues noted from our review of Aurizon Network's forecast operating expenditure, reported by exception, are discussed below.

Corporate Overheads

Duplication of depreciation costs

10.5 Aurizon Network's corporate plan for FY 2013 which was utilised to allocate corporate overheads to Aurizon Network operations included a duplication of forecast depreciation costs. This was due to depreciation costs being included in both a depreciation cost centre which included all forecast depreciation costs and within a number of the individual cost centres to which the assets belong (IT and safety, health and environment).

10.6 The above has resulted in Aurizon Holdings total forecast corporate overheads being overstated as follows:

- IT costs overstated by $5,898,000; and
- Safety, health and environmental costs overstated by $2,413,000.

10.7 The impact of these adjustments is dependent on the corporate cost allocation methodology adopted. This is discussed in section 3 of our report.

10.8 The table below sets out the impact of the proposed adjustment to the 2012/13 corporate cost allocations based on:

- Aurizon Network's original proposed corporate overhead allocation methodology;
- replacing the blended rate allocations with a direct cost allocation methodology; and
- utilising an alternative blended rate utilising directs costs instead of revenue, with other components remaining unchanged.

2012/13 corporate cost allocation	Total Corporate Cost Adjustment $'000	Note	Aurizon Network Corporate Cost Allocator/Proposed Allocator	Aurizon Blended Rate 1 $'000	Direct Cost Allocation $'000	Alternative Blended Rate $'000
IT costs	5,898	1	Blended/Direct	1,448	612	1,241
Safety, health and environment	2,413	1	Blended/Direct	592	250	508
				2,040	862	1,749

Source: RSMBC Calculations

1) Source: Aurizon Network depreciation estimate calculations

System Wide Operating Expenses

Allocation of Mackay Train Control Centre Costs to Non-Coal Activities

10.9 Aurizon Network has allocated 9% of costs in relation to the main Train Control Centre in Rockhampton to non-coal activities on the basis of average historical train kilometres for non-coal train services as a proportion of total train kilometres.

10.10 Following the consolidation of the Rockhampton and Mackay train control centres, the Mackay train control centre has been maintained as a fully functional duplicate control facility utilised for both disaster recovery and training purposes.

10.11 On the basis that the function of the Mackay train control centre is to act as both backup for the Rockhampton train control centre and to provide training for staff prior to working in the Rockhampton train control centre, we consider that it would be reasonable that 9% of these costs should also be allocated to non-coal activities.

10.12 The impact of this adjustments to the system wide operating costs is set out below.

Consolidated Network Operations Opex Costs	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
Train Control Centre Mackay - Original Forecast	1,529	1,607	1,688	1,765
Allocation to non-coal activities - 9%	(138)	(145)	(152)	(159)
Train Control Centre Mackay - Adjusted Forecast	1,391	1,462	1,536	1,606

Source: RSMBC Calculations
Costs expressed in nominal dollars

Amended Aurizon Network's forecast operating expenditure

10.13 The amended Aurizon Network forecast operating expenditure taking into account the impact of the matters set out above, together with the matters outlined in section 3 and 8 of this report will depend on the on the corporate cost allocation methodology adopted. This is discussed in section 3 of our report.

10.14 The tables below set out the impact of all of the matters identified by RSMBC both on a total cost basis and on a system by system basis based on the following corporate cost allocation methodologies:

- Aurizon Network's original proposed corporate overhead allocation methodology;
- replacing the blended rate allocations with a direct cost allocation methodology; and
- utilising an alternative blended rate utilising directs costs instead of revenue, with other components remaining unchanged.

Aurizon Network's original proposed corporate overhead allocation methodology

Amended Forecast Operating expenditure	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
System wide operating expenditure - Aurizon Network Proposed	57,578	60,230	65,401	67,220
Less: adjustment for Mackay Train Control Centre	(138)	(145)	(152)	(159)
Less: adjustments based on high level review of operating expenditure - Section 8 - Page 120 *	(446)	(457)	(469)	(480)
Amended system wide operating expenditure	**56,994**	**59,628**	**64,780**	**66,581**
Corporate overheads - amended as set out in Section 3 - Page 55	64,109	66,665	69,244	71,738
Less: adjustments based on high level review of operating expenditure - Section 8 - Page 108 *	(8,105)	(8,307)	(8,515)	(8,728)
Less: adjustments based on detailed review of operating expenditure - Section 10 - Page 131 *	(2,091)	(2,144)	(2,197)	(2,252)
Amended corporate overheads	**53,913**	**56,214**	**58,532**	**60,758**
Total amended operating expenditure	**110,907**	**115,842**	**123,312**	**127,338**
UT4 proposed costs	123,551	128,849	136,689	141,086

Source: RSMBC Calculations
Costs expressed in nominal terms
*** adjustments have been inflated based on CPI of 2.5% per annum**

Amended Forecast Operating expenditure - by system	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
Blackwater	31,985	34,021	37,374	39,297
Goonyella	53,817	55,323	58,339	59,115
Newlands	7,817	7,893	8,146	8,664
Moura	7,093	7,274	7,005	7,360
GAPE	10,194	11,332	12,447	12,902
Total	**110,907**	**115,842**	**123,312**	**127,338**

Source: RSMBC Calculations
Costs expressed in nominal terms

Direct cost allocation methodology

Amended Forecast Operating expenditure	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
System wide operating expenditure - Aurizon Network Proposed	57,578	60,230	65,401	67,220
Less: adjustment for Mackay Train Control Centre	(138)	(145)	(152)	(159)
Less: adjustments based on high level review of operating expenditure - Section 8 - Page 120 *	(446)	(457)	(469)	(480)
Amended system wide operating expenditure	**56,994**	**59,628**	**64,780**	**66,581**
Corporate overheads - amended as set out in Section 3 - Page 55	48,005	49,798	51,610	53,374
Less: adjustments based on high level review of operating expenditure - Section 8 - Page 108 *	(3,720)	(3,813)	(3,908)	(4,006)
Less: adjustments based on detailed review of operating expenditure - Section 10 - Page 131 *	(883)	(905)	(928)	(951)
Amended corporate overheads	**43,402**	**45,080**	**46,774**	**48,417**
Total amended operating expenditure	**100,396**	**104,708**	**111,554**	**114,997**
UT4 proposed costs	123,551	128,849	136,689	141,086

Source: RSMBC Calculations
Costs expressed in nominal terms
*** adjustments have been inflated based on CPI of 2.5% per annum**

Amended Forecast Operating expenditure - by system	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
Blackwater	29,170	31,000	34,051	35,733
Goonyella	48,684	49,958	52,740	53,363
Newlands	7,009	7,067	7,303	7,750
Moura	6,437	6,592	6,361	6,671
GAPE	9,096	10,092	11,100	11,480
Total	**100,396**	**104,708**	**111,554**	**114,997**

Source: RSMBC Calculations
Costs expressed in nominal terms

Alternative blended rate utilising directs costs instead of revenue

Amended Forecast Operating expenditure	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
System wide operating expenditure - Aurizon Network Proposed	57,578	60,230	65,401	67,220
Less: adjustment for Mackay Train Control Centre	(138)	(145)	(152)	(159)
Less: adjustments based on high level review of operating expenditure - Section 8 - Page 120 *	(446)	(457)	(469)	(480)
Amended system wide operating expenditure	**56,994**	**59,628**	**64,780**	**66,581**
Corporate overheads - amended as set out in Section 3 - Page 55	58,002	60,316	62,651	64,908
Less: adjustments based on high level review of operating expenditure - Section 8 - Page 108 *	(7,019)	(7,195)	(7,375)	(7,559)
Less: adjustments based on detailed review of operating expenditure - Section 10 - Page 131 *	(1,792)	(1,837)	(1,883)	(1,930)
Amended corporate overheads	**49,190**	**51,285**	**53,393**	**55,419**
Total amended operating expenditure	**106,184**	**110,912**	**118,174**	**122,000**
UT4 proposed costs	123,551	128,849	136,689	141,086

Source: RSMBC Calculations
Costs expressed in nominal terms
*** adjustments have been inflated based on CPI of 2.5% per annum**

Amended Forecast Operating expenditure - by system	Year ending 30 June 2014 Forecast $'000	Year ending 30 June 2015 Forecast $'000	Year ending 30 June 2016 Forecast $'000	Year ending 30 June 2017 Forecast $'000
Blackwater	30,720	32,682	35,922	37,756
Goonyella	51,511	52,948	55,892	56,627
Newlands	7,454	7,527	7,778	8,269
Moura	6,798	6,972	6,723	7,062
GAPE	9,701	10,783	11,858	12,287
Total	**106,184**	**110,912**	**118,174**	**122,000**

Source: RSMBC Calculations
Costs expressed in nominal terms

Benchmarking of amended costs

10.15 The table below sets out the revised costs set out above for the year ending 30 June 2014 and compares them to the three benchmark entities (Brookfield Rail, ARTC (Hunter Valley) and the indicative "Shadow") discussed in Section 9 on a $/Track Km, a $/forecast GTK basis and a $/contract GTK basis.

	Brookfield Rail	ARTC Hunter Valley	Indicative Shadow Benchmark	Aurizon Network Proposed Allocation Methodology	Direct Cost Allocation Methodology	Alternative Blended Rate Allocation Methodology
Operating Cost ($ million)	14.33	29.73	52.83	56.99	56.99	56.99
Overhead Cost ($ million)	20.85	16.67	40.24	53.91	43.40	49.19
Total Cost ($ million)	**35.18**	**46.40**	**93.07**	**110.90**	**100.39**	**106.18**
Track Km	1,997	1,336	2,667	2,667	2,667	2,667
Total Cost / Track Km	**$17,618**	**$34,731**	**$34,897**	**$41,582**	**$37,642**	**$39,813**
Forecast GTK (million)	23,532	43,309	80,513	80,513	80,513	80,513
Total Cost / Forecast GTK (cents)	**0.150**	**0.107**	**0.116**	**0.138**	**0.125**	**0.132**
Contracted GTK (million)	N/a	43,309	107,138	107,138	107,138	107,138
Total Cost / Contracted GTK (cents)	N/a	**0.107**	**0.087**	**0.104**	**0.094**	**0.099**

(2013/14 real dollars)

10.16 This benchmarking exercise has a number of constraints that need to be recognised. In particular, that quality and level of information for the comparative below rail access providers is limited. There are a number of operational differences as outlined in paragraphs 8.5 (page 90) to 8.15 (page 92) and paragraph 9.17 (page 124) that will impact on the costs of Aurizon Network compared to the comparable entities.

10.17 The Aurizon Network proposed allocation methodology is most closely aligned with the benchmark costs for ARTC on a $/contracted GTK basis.

10.18 The direct cost allocation methodology is most closely aligned with the benchmark costs on a $/Track Km and a forecast $/GTK basis.

Conclusion

10.19 Aurizon Network has identified a number of factors and differences between its operations and that of the comparable entities that also impact on the assessment of the benchmarking results including:

- Aurizon Network operates a system with significant route electrification;
- Aurizon Network's CQCN system is predominantly in a remote location and in a region which endures more extreme weather conditions compared with the Hunter Valley coal system resulting in higher operational complexity and costs;
- Aurizon Network is part of a more complex supply chain structure when contrasted with the Hunter Valley coal system which interfaces with one port precinct which is governed by the HVCCC. The Central Queensland Ports have significant different operating modes which directly affect the capacity and operation of the Central Queensland Coal System. For example the Dalrymple Bay Coal Terminal has a cargo assembly model which places significantly more strain and operational complexity onto the rail and mine components of the supply chain compared with the Hunter Valley;
- Interconnectivity of the four systems creates complexity with respect to access rights, cross system tariffs and operations to several terminals both domestic and export; and
- the introduction of short term transfers system will also add complexity to train scheduling. As a response to feedback from customers for greater flexibility in the management of access rights, including for the purpose of managing take or pay obligations, Aurizon Network has agreed with the proposal of the introduction of a process to facilitate short term transfers, by enabling customers within a cluster (or within a short geographical distance of each other) to seek pre-approval of a transfer.

10.20 However, it is also noted that Aurizon Network is part of a larger group with shared corporate services. Therefore, when benchmarking Overhead Costs against comparable entities, consideration also needs to be given to Aurizon Network having access to synergistic cost savings from its shared corporate services which would not be available to comparable, stand-alone companies, which are smaller in size than the Aurizon Holdings group.

10.21 We further note that Aurizon Network has incorporated a separate overhead allowance within the classification of its maintenance costs as discussed in Section 4 of this report. We are unable to ascertain whether the benchmark entities adopt a similar treatment within their classification of costs.

10.22 We are not able to quantify the differences in costs that the above factors will have on the costs of Aurizon Network compared to the benchmark entities. Quantification of the above would require an extensive operational analysis of Aurizon Network and the benchmark entities.

10.23 The benchmarking is therefore limited, and our ability to draw conclusions that can be substantiated is limited accordingly.

10.24 We are unable provide a conclusion as to which of the above cost allocation methodologies is the most appropriate. The factors which need to be ascertained to make a conclusion that can be fully substantiated include:

- quantification of the normalisation of costs that would be required to be made to ARTC (Hunter Valley) and Brookfield Rail to account for the operational differences as set out in paragraphs 10.19 and 10.20;
- an operational review of Aurizon Network's operations and structure to assess the impact on Aurizon Network's costs of being required to be in a position to resource to contract or peak capacity levels; and
- a full operational and organisation analysis of Aurizon Network operations would be required to refine and validate the assumptions within the indicative "Shadow" benchmark.

10.25 However, we would note that the direct cost allocation methodology is most closely aligned with the benchmark costs on a $/Track Km and a $/GTK basis. We consider that these two metrics are of particular relevance to measuring the efficiency of a below rail network operator.

Review of productivity improvements reflected within the UT4 forecasts

10.26 The UT4 operating forecasts have been calculated by Aurizon Network by:

- assessing base forecast operating expenses for the year ending 30 June 2013;
- escalating these costs by the following indexations factors; and

	FY14	FY15	FY16	FY17
Train Control	1.90%	2.60%	2.50%	2.10%
Professional	2.30%	3.20%	2.90%	2.30%
CPI	2.50%	2.50%	2.50%	2.50%

- adjusting costs for one off regulatory costs in 2015/16 and 2016/17 in relation to preparing for the UT5 access undertaking proposal.

10.27 Aurizon Network has advised of the following areas of productivity benefits incorporated into the UT4 period:[37]

- "Aurizon Network expects volumes to increase by 2017 by an additional 40mt without the requirement for significant additional train control resources. Based on a 310m/t contracted this represents 28% uplift or productivity gain from the current 242m/t contracted (FY2013). Given that infrastructure is built in line with contractual requirements, Aurizon Network has structured the organisation to be able to manage movement of such tonnes (even if actual or forecast tonnes are lower);
- Aurizon Network is developing an integrated Network Planning, Scheduling and Execution tool, APEX (Project Pluto). APEX is expected to decrease the turnaround of the weekly plan by between 24-48 hours freeing up the planning team to improve ad hoc access requests and securing non-invasive maintenance windows. The Project Pluto business case identifies an improvement of circa 200 train paths annually that are currently identified as scheduling conflicts. APEX will be used to support this drive as the movement planner identifies "white space" or natural windows to conduct maintenance activities. Aurizon Network's target is to hold constant the number of system closures over the UT4 period even though the maintenance task will materially increase based on the forecast increase in volumes projected over the UT4 period;
- a key initiative and productivity improvement is planned in relation to the interface between maintenance teams and network control. Currently the procedure requires maintenance crews to request access and protection via radio and paper forms. As part of the track access system (TAS) initiative, network control will interface with crews electronically. This will have the effect of decreasing the time it takes teams to get on track and reducing the access process turnaround time for the controllers. Based on analysis of similar operations in the United States, it is anticipated that a minimum of 1hr a day improvement (reduction) in access request time per maintenance crew will be realised. This also allows the existing train control team to absorb the additional contracted capacity expected over the UT4 period;
- use of train control simulator- a train control simulator has been developed with the aim of improving train control capability, competence and consistency. Controllers are exposed to various scenarios to improve reaction time and develop enhanced skills in a safe environment.

[37] Source: Aurizon Network Management response to request for information provided on 6 December 2013

- Phase 2 of Project Pluto is also in development to provide decision support capability. This will have a productivity benefit in that decisions made by the train controllers will be made in relation to the performance of the whole system rather than just that controllers train control board;

- as a response to feedback from customers for greater flexibility in the management of access rights (i.e. temporary transfers or 'capacity swaps' between access holders) Aurizon Network has agreed with the proposal of the introduction of a process to facilitate short term transfers, by enabling customers within a cluster (or within a short geographical distance of each other) to seek pre-approval of a transfer. Whilst the provision of this service is not showing as a productivity improvement in the train control area based on existing headcount. Aurizon Network asserts that there is a significant amount of additional work required to support short term transfers over the UT4 period, which is being absorbed and has not been included as an additional cost in the outer years of UT4 in the form of additional headcount;

- Aurizon Network has put forward an operator capping proposal to provide stronger performance incentives for operators by allowing the operator to attribute the consumption of access rights from over-railing to mitigate its take or pay obligations (either through its direct contracted access rights or through end-user nomination), prior to distributing those benefits to the broader system."

10.28 Aurizon Network also commented that productivity in the area of train control should take into account the ability to improve capacity on the track by improving scheduling and efficient management of closures, with the benefit of additional efficiency created on the network outweighing any potential cost savings achieved from a reduction in headcount.

10.29 RSMBC considers that the above, represents a number of valid productivity improvements which will improve the operational efficiency and safety of Aurizon Network's operations.

10.30 RSMBC notes that in an ASX investor presentation lodged on the ASX on 19 August 2013, Aurizon Holdings reported a drive to achieve sustainable cost reductions and efficiencies of $90 million in FY2014 and a further $140+ million in FY2015.

10.31 Aurizon Network has advised that $100 million of these costs savings relate to shared support services. Aurizon Network further advised that some of these cost savings had been identified when the UT4 cost submission was prepared, but others had not, and the specific areas where these savings will be achieved are still to be identified and may not be in areas in which Aurizon Network receives a significant allocation of costs.

10.32 Whilst Aurizon Network's costs form a small proportion of Aurizon Holdings' total costs, we do not consider it unreasonable to expect that a proportion of the cost savings to relate to below-rail activities.

Productivity improvements reflected in other access agreements

10.33 From a review of other access agreements, we note that the:

- Melbourne Metro Access Agreement includes an X factor of 1% per annum. Based on this, Metro are committed to reduce access costs by 1% per annum in real terms over the 5 years of the access agreement (5 years ended 30 June 2016);
- Access Agreement in relation to Brookfield Rail's network includes an X factor adjustment in relation to productivity of 25% of CPI; and
- financial forecast costs utilised to form the regulatory tariffs for the ARTC (Hunter Valley) 2010 Access Undertaking refer to an annual productivity factor being applied in the escalation of costs on a year by year basis. The nature of this productivity factor is not disclosed.

Consideration of Stakeholder Submissions

QRC

10.34 QRC noted that at an investor briefing, Aurizon Holdings reported a targeted $100 million reduction in centralised support costs and $130 million in above rail productivity improvements by FY15. QRC noted that it was unclear, if the savings in centralised support costs have been factored into Aurizon Network's UT4 System Wide and Regional Cost claim.

10.35 QRC noted that the targeted reduction in centralised support costs and above rail productivity improvements is at complete odds with the UT4 System Wide and Regional cost claim and that Industry contends that productivity improvements which are occurring in non - regulated businesses in Aurizon Group are equally applicable to Aurizon Network.

10.36 QRC considers that QCA should consider reintroducing a productivity factor, such as CPI – X, to apply to Aurizon Network operating expenditure through the UT4 period, as occurred prior to UT3.

RSMBC Comments

10.37 We have considered the investor briefing referred to in our review of productivity improvements within the UT4 period. RSMBC agrees that, where Aurizon Holding's is reducing centralised support costs over the UT4 period, then an allocation of these savings for areas where costs are allocated to Aurizon Network should be recognised within the UT4 forecasts.

BMA/BMC

10.38 BMA/BMC submitted that it considers that Aurizon Network has forecast an upwardly biased annual regulatory revenue stream, partly by not providing a CPI-X efficiency measure in its operating or maintenance costs forecasts.

10.39 BMA/BMC observed that:

- the objective of a CPI-X price adjustment in regulated industries is to ensure a regulated business prices its outputs as it would in a competitive market;
- a CPI-X efficiency measure was applied by the Authority in UT1 and UT2;

- in UT3 the Authority accepted Aurizon Network's request for the X factor be valued at zero on the basis that sufficient productivity improvements had already been incorporated into Aurizon Network's UT3 estimated maintenance and operating cost forecasts. The UT3 forecasts were fully transparent to the Authority and outlined a "bottom up" analysis of the expected costs to be incurred that included specific efficiency improvement measures; and

- in contrast the UT4 documentation has not outlined similar explicit efficiency gains that have been imbedded into the UT4 maintenance cost forecasts.

10.40 BMA/BMC expressed concern the Draft Access Undertaking does not address a CPI-X efficiency measure as an issue requiring an Authority decision. BMA/BMC stated that "whilst the QCA is presented with the overwhelming task of sifting through all cost data (based on a cost allocation within Aurizon's Management Accounts), external reports and confidential reports within a relatively short period of time, we need to ensure the standard regulatory efficiency measure is not forgotten in the midst of this review activity".

10.41 BMA/BMC concluded that, "where any doubt exists with respect to a decision on AN's forecast regulatory cost base, then BMA/BMC QCA also apply an X factor adjustment to provide sufficient incentive for AN to deliver efficiency savings over the UT4 period".

RSMBC Comments

10.42 The productivity improvements being implemented by Aurizon Network were not specifically defined within volume 3 of the 2013 Draft Access Undertaking.

10.43 The productivity improvements over the UT4 period are not proposed to explicitly result in real cost reductions over the UT4 period, but do appear to provide benefit both through increased volume delivery without cost increases and other improved service delivery.

Conclusion

10.44 From material provided to us, we consider the UT4 operational expenditure forecasts have provided for a number of operational productivity initiatives which, whilst not producing any reduction in costs over the UT4 period, provide for a number of productivity improvements and improved services to CQCN users.

10.45 Aurizon Network has asserted that its structure and initiatives will enable the delivery of a 28% increase in contracted volume without significant cost increases, which would result in a long term reduction in the marginal cost of supply to CQCN users, so long as volumes increase. It is not possible to provide a quantitative assessment of the value of the other productivity initiatives being undertaken by Aurizon Network.

10.46 Therefore, Aurizon Network appears to have implemented productivity improvements within its system wide operations. Given the above, the application of a further CPI-X adjustment to system wide direct costs (excluding Corporate Overheads) does not appear to be required.

10.47 Aurizon Holdings has advised that there is a drive to reduce shared corporate costs by $100 million over FY 2014 and FY 2015. Aurizon Network advised that some of these cost savings had been identified when the UT4 cost submission was prepared, but others have not and the specific areas where these will be achieved are still to be identified and may not be in areas in which Aurizon Network receives a significant allocation of costs.

10.48 Whilst Aurizon Network's costs form a small proportion of Aurizon Holdings' total costs, we do not consider it unreasonable to expect that a proportion of the cost savings to relate to below-rail activities.

10.49 We note that Brookfield Rail, ARTC (Hunter Valley) and Melbourne Metro were identified as having productivity improvement obligations included within their access agreements on a CPI-X basis.

10.50 We therefore consider it reasonable that a CPI-X adjustment be included within the UT4 forecast operational expense to be applied to allocated corporate overhead costs to represent reasonable productivity improvement to be incorporated on a year by year basis.

10.51 An X factor of between 0.625% (being the 25% of CPI (assumed to be 2.5%) applied within the Brookfield Rail Access Agreement) and 1% (being the factor provided for within the Melbourne Metro Access Agreement) would appear to be reasonable.

11. Task 3.3.1 – Advice on Interest During Construction ("IDC")

Scope

11.1 RSMBC has been requested by QCA to provide an opinion, including tax advice, on the reasonableness of the proposed Interest During Constriction methodology within section 8.6 of Volume 3 of the 3013 Draft Access Undertaking.

11.2 As part of the above process, RSMBC has been requested by QCA to consider relevant submissions from QRC, Asciano, BMA and BMC and RTCA.

Background

11.3 The construction of many of Aurizon Network's capital expenditure projects span a large timeframe and Aurizon Network is not able to recover a return on an asset until that asset has been commissioned and included in the RAB (following approval by the QCA).

11.4 Therefore, to enable Aurizon Network to obtain a return on the amounts expended on capital projects prior to the asset being commissioned, an IDC cost is accrued into the cost of an asset up to the date of an asset's inclusion in the RAB.

11.5 The above treatment has been applied in prior access undertaking periods.

11.6 During the review of the 2007/08 capital expenditure claim, Aurizon Network and the QCA agreed that the IDC should be calculated on the basis of accumulated interest on actual monthly capital expenditure up to the month of the assets inclusion in the RAB based on the following formula.

$$IDC = \sum [Capex_m * (1 + ((1 + WACC^{1/12}) - 1))^{remainingmonths}]$$

Where:

$Capex_m$ = capex for the month

Remaining months = months remaining prior to date asset written into the RAB

11.7 The WACC was based on the QCA approved WACC, which is a post tax nominal vanilla WACC.

11.8 The post-tax nominal vanilla WACC is calculated based on the following formula.

$$WACC_3 = k_d \times L + k_e \times (1 - L)$$

Where:

k_d = cost of debt

k_e = cost of equity

L = leverage (debt to total value), based on benchmark gearing

11.9 In Volume 3 of the 2013 Draft Undertaking, Aurizon Network's has submitted that a complexity has been identified with the use of a post tax nominal vanilla WACC for the purposes of calculating the IDC to be applied in the calculation of asset values for inclusion in the RAB.

11.10 The use of the post-tax nominal vanilla WACC requires the tax deductibility of capitalised debt interest costs (forming a proportion of the IDC based on the assumed gearing ratio) to be taken into account in the modelling of cash flows.

11.11 The revised revenue model proposed by Aurizon Network for the UT4 period does not include a return on and of assets and associated interest cash flows on assets until the date they are forecast to be commissioned and included in the RAB.

11.12 Therefore, the revised revenue model does not take into account the tax deductions derived from the debt funding of capital expenditure prior to the date that they are included in the RAB.

11.13 To rectify this, Aurizon Network proposes to utilise a post-tax nominal WACC formula comprising of the weighted average of the post-tax cost of debt and the post-tax cost of equity (referred to as the post-tax classic WACC) as expressed in the following formula.

$$WACC = k_d(1-T_c(1-\delta)) \times L + k_e \times (1-L)$$

Where:

T_c = corporate tax rate

δ = gamma

11.14 In Volume 3 of the 2013 Draft Undertaking Aurizon Network states that this complexity has arisen due to recent tax tax changes which allows for tax deductions for capitalised interest to be recognised when incurred. We have been advised through subsequent discussions with Aurizon Network that this is not the case and that the ability to obtain tax deductions for capitalised interest as incurred has been in place for a number of years.

11.15 As part of the terms of reference, we have undertaken a review Aurizon Network's tax treatment of interest during construction.

RSMBC Comments – proposed IDC calculation methodology

11.16 RSMBC has undertaken a review of Aurizon Network's proposed methodology and concluded that it appears reasonable, as discussed below.

11.17 In calculating any return on capital, it is critical that the discount rate utilised to calculate returns is matched to the cash flows that are being utilised. For example, a nominal discount rate is required to be applied to nominal cash flows and a post-tax discount rate is required to be applied to post tax cash flows.

11.18 As the revenue model proposed by Aurizon Network does not take into account the tax deductibility of interest on capital expenditure, an adjustment in the discount rate used to calculate the IDC should be made to reflect this.

11.19 Based on the upper bounds of the proposed WACC assumptions within Volume 3 of the 2013 Draft Undertaking the post-tax nominal vanilla WACC and the post-tax nominal classic WACC are as set out below.

post-tax nominal vanilla WACC	post-tax nominal classic WACC
8.18%	7.36%

11.20 The utilisation of the lower post tax nominal classic WACC reduces the IDC charge throughout the period of construction of the asset until it is commissioned and included in the RAB (resulting in a lower asset value on which Aurizon Network receives a return). However, Aurizon Network will be compensated for this reduction in the commissioned asset value through its ability to benefit from the tax deductibility of the interest expenses incurred during the construction period.

11.21 As a further cross check of the proposed IDC methodology, Aurizon Network also provided RSMBC with a hypothetical model which, for a hypothetical asset constructed over three years, compared the commissioned asset value inclusive of capitalised interest in the year of commissioning to the equivalent cash flows that Aurizon Network would have earned had the capital expenditure been included in the RAB in the year it was occurred.

11.22 The hypothetical model demonstrated that, other than for a small variance (less than 0.1%) due to timing differences, the proposed methodology calculated an equivalent asset value to be capitalised into the RAB.

11.23 RSMBC has reviewed the integrity and of the hypothetical model provided by Aurizon Network. No issues were noted from the review.

Taxation treatment of Interest During Construction

11.24 RSMBC made enquiries of Aurizon Network in relation to the tax deductibility of debt interest component of Interest During Construction.

11.25 Aurizon Network advised that:

- Prior to 1 July 2001 - Aurizon Network could claim a deduction under the general deduction provision (section 8-1) for interest expenses incurred provided the borrowed funds have been applied for the purposes of gaining or producing assessable income and the expenditure is not considered to be capital in nature. In this regard, in Steele v Deputy Commissioner of Taxation, the High Court of Australia held that interest expenses in relation to the purchase of a capital asset is revenue and not capital in nature, and this character is not altered by the fact that the borrowed funds are used to purchase capital assets;

- From 1 July 2001 (but prior to 30 June 2010) - section 25-85 applied to ensure that interest incurred on the debt interest (i.e. bank debt) is not prevented from being deducted under the general deduction provision, even where the interest is capital in nature. Accordingly, interest expenses in relation to debt obtained after 1 July 2001 by Aurizon Network to fund the construction of the assets continued to be deductible under the general deduction provision as the funds have been applied for an income producing purpose. This would be the case even if the costs were considered to be capital in nature (in spite of Steele's case); and

- from 1 July 2010 - relation to debt issued from 1 July 2010, the Taxation of Financial Arrangements (TOFA) provisions apply to treat any outgoings incurred in relation to a financial arrangement (i.e. bank debt) as deductible (section 230-15) provided the outgoing is incurred in gaining or producing assessable income. In relation to interest on a bank debt, the interest is deductible over the period of the loan (i.e. essentially in the income year the interest expense is incurred.) This means the expenditure is not excluded from being deductible even where it would be considered to be capital in nature under the general deduction provision. Accordingly, interest expenses in relation to debt obtained after 1 July 2010 by Aurizon Network to fund the construction of assets will be deductible under Division 230 as the funds have been applied for an income producing purpose. This would be the case even if the costs were considered capital in nature (in spite of Steele's case).

11.26 Based on the above, Aurizon Network considers that interest incurred on borrowings used to fund the construction of assets will be deductible to Aurizon Network and that the deduction will essentially arise in the income year in which the interest is incurred.

RSMBC Comments

11.27 We have reviewed the above tax assessment provided by Aurizon Network, and concur with the conclusions reached.

11.28 We would also note that:

- a return that would be deductible only because of the combined operation of s 25-85 and s 8-1 (i.e. a return that would not be deductible but for s 25-85) is deductible only to the extent that the 'annually compounded internal rate of return' does not exceed 'the benchmark rate of return for the interest increased by 150 basis points (refer s 25-85(5)) - an equivalent cap is contained in the TOFA rules at s 230-15(5),

- it may be necessary to consider an application of the 'thin capitalisation' provisions which operate to deny interest deductions in certain circumstances. These provisions however only apply where a taxpayer has cross-border investments.

11.29 However, we consider it unlikely that either of the above provisions would impact the tax deductibility off debt interest component of Interest During Construction.

Consideration of Stakeholder Submissions

11.30 No stakeholder submissions were identified that were relevant to the review of interest during construction.

Conclusion

11.31 Based on our review, the interest during construction methodology proposed by Aurizon Network appears reasonable.

11.32 The utilisation of a post-tax nominal WACC of 7.36% appears reasonable on the basis that the 8.18% post-tax nominal vanilla regulatory WACC is approved. Any amendments to the post-tax nominal vanilla WACC will require an associated change to the post-tax nominal WACC utilised to calculate IDC.

12. Task 3.3.2 – Review of Capital Cost Build-Up

Scope

12.1 Aurizon Network's proposed Capital Indicator includes a total forecast capital expenditure of $1.95 billion over four years for the CQCN.

12.2 Capital Indicator relates to the annual capital expenditure allowance approved by the QCA, from time to time, for the purpose of assessing the relevant Reference Tariffs.

12.3 Whenever a project (or set of projects) is constructed, the associated cost, time and scope is assessed based on the risk management framework. The cost build-up, and particularly the contingency funds, should bear some relationship with the risk associated with Aurizon Network not meeting the targets associated with that project.

12.4 RSMBC has been requested by QCA to review Aurizon Network's methodology to calculate capital cost build-up, and how it links to the investment framework and risk contingency measures.

12.5 As part of the above process, RSMBC has been requested by QCA to consider relevant submissions from QRC, Asciano, BMA and BMC and RTCA.

Work undertaken by RSMBC

12.6 RSMBC has undertaken the following:

- a review of proposed capital investments to ascertain the planning and development work done;
- for a sample of projects, a review of the project's scope;
- for a sample of projects we reviewed Aurizon Network's assessments of the risk profile of each project and ascertained the risks that are within Aurizon Network's control which are included in its risk adjusted WACC;
- a review of Aurizon Network's Capital cost build-up methodology; and
- we assessed the reasonableness of risk contingency measures included within the capital cost build-up based on the above.

RSMBC Comments

12.7 The estimation of capital costs for rail projects in Australia has generally entailed significant allocation of allowances for risks and contingencies. Whilst these allowances vary as the project moves through its natural lifecycle, the application of risk management and governance is critical to ensure that there is adequate control over the scope of the projects.

12.8 In undertaking a review of the Capital Cost Build Up, Aurizon Network was asked to provide a detailed list of projects which form the Capital Indicator for UT4.

12.9 Once the list of all projects (approximately 300 projects, categorised into 14 groups) was obtained, a meeting was held with Aurizon Network to understand Aurizon Network's investment framework, approach to estimating costs across the project lifecycle and allocation & control of contingencies.

12.10 Following meeting with Aurizon Network, RSMBC selected three sample projects to reflect:

- materiality of values under UT4;
- a sample of various project types; and
- status in terms of delivery.

12.11 The three projects selected for review of the capital cost build up are outlined in the table below. These projects represent 23.8% of the total Capital Indicator.

Project Name (Reference)/ Project Code	Total value under UT4 Submission ($ million)	Component value assessed ($ million)[1]	Current Project Cost Estimate ($ million)[5]	Description / Status
HPX 3 (APR 11007) / A 03353	132.791	[redacted]		Goonyella Rail Expansion Project – Track duplication south of Hay Point. In execution phase
Turnout Replacement Program (APR 12166)	143.180			Replacement of turnout for the coal network, system wide. Majority of the forecast expenditure ($120m) is expected to occur in FY 2017.
WIRP – Stage 1 (APR 11115) / A02976	910.000			Comprising of the North Coast Line Aldoga triplication and Wiggins Island balloon loop. In execution phase

1- Source: Aurizon Network UT4 Capital Indicator breakdown
2- $58.9621 million represents one of 3 projects of the total HPX 3 Capital Indicator amount of $132.791 million.
3- $143.180 million represents 100% of the Turnout replacement program.
4- $263.786 million represents one of 11 projects of the total WIRP – Stage 1 Capital Indicator amount of $910.000 million.
5- Source: Aurizon Network project cost summary sheets – represents Aurizon Network's most recent project cost estimates. Estimated costs of HPX 3 and WIRP Stage 1 changed as a result of scope changes and refinement of estimated costs between the preparation of the capital indicator in 2012 and the date of this report.

12.12 As part of the review, Aurizon Network provided the following documents:

- Cost Estimating Procedure (T 1137 Version 1.0 Date 2/08/2007);
- Project Management Manual (PMM 1312, Version 1.0 Date 14/06/2013);
- Enterprise Risk Management Framework (Version 6.0 Date 8/07/2013);
- Project Governance Framework;
- Investment Framework Manual Version 3.1 dated 1/11/2012;
- Project Summary sheets for the above three projects and updated summary estimates for Project HPX 3 (APR 11007) and WIRP – Stage 1 Packages; and
- Risk Register for North Coast Line Aldoga triplication and Wiggins Island balloon loop (A02976).

Aurizon Network's approach for Capital Cost build up

12.13 Aurizon Network's investment management framework is based on investment estimates having a range of accuracy depending on the maturity level (development stage) of a project. The level of allowance for the inaccuracy of cost estimates changes from about +/- 50% (at concept stage) to about +/- 10% at feasibility stage (detailed design prior to execution).

12.14 Aurizon Network's Cost Estimating Procedure states that capital cost estimates are built up from base estimated costs, which are then:

- adjusted for location and scale of the project
- adjusted for with allowances for design changes and quantity variances; and
- adjusted for risk contingencies.

12.15 The level of contingencies to be applied to projects also varies on the level of project development. These are 30-50% at concept stage and 5%-15% at the feasibility stage. Aurizon Network apply contingencies, based on the project summary costs, to direct estimated project costs at three levels, as follows:

- for each discipline (trade);
- risk contingency based on a risk assessment process; and
- an overall project level.

12.16 The general polices adopted in the Investment Management Manual and Estimating Procedure are considered reasonable and consistent with industry practice for civil / track projects.

12.17 However, we note the following:

- the Investment Framework Manual and Cost Estimating Procedure do not differentiate between various project types. For example, it would be expected that the cost accuracy or allocated contingency for system/technology projects would entail a higher level of variance/contingency compared to predominantly civil construction projects to allow for higher risks and uncertainties associated with system/technology projects;

- the approach for calculating the contingency for each discipline and overall project level contingency is not articulated in the Cost Estimating Procedure. However, we have been advised that Project Management is governed by Project Risk Profiling (utilising Monte Carlo analysis), Independent Peer Reviews of Estimate, Investment Framework Policies and Project Management Manual which all act as controls to manage the quantum and type of contingencies factored into the project budgets. The above process appears appropriate and mitigates the risk of contingency levels being inappropriately factored into capital estimates; and

- the actual build-up of the capital costs for the three projects could not be reviewed for consistency with the Cost Estimating Procedure or the overall level of contingency applied.

Extent of contingency applied and relationship to risks

12.18 In the capital investment submission for UT4, the costs of two of the three projects reviewed include allowances for discipline and risk contingency allowance.

12.19 We have been advised by Aurizon Network that the Capital Indicator projects generally include discipline and risk contingency allowances, but do not include a general project contingency allowances. The Capital Indicator project forecasts are based on the most likely expenditure to occur based on the known schedule and scope of the project. Contingency budgets are only drawn down and forecasted once that risk becomes tangible and will be incurred.

12.20 Aurizon Network advise that, whilst there is no single formula to value the contingency amount, the level of contingency is built upon a number of complex factors which includes

- the level of certainty of the estimate;

- the level of detail known for the phase the project is in;

- the level of design and investigations undertaken for the project;

- the timing of delivery of the project;

- the technology adopted in the project and the mix of trades combined in the projects (i.e. is it a civil or a signalling project); and

- the level of familiarity Aurizon has with the project i.e. is it a standard rail project using Aurizon' Design Standards.

12.21 Detailed estimates of the Turnout Replacement Program have not been prepared as this project has been costed on the basis of the investment required to keep the system up to date rather than scoping of individual work packages within the program.

12.22 The contingency amounts used in the updated project costs (representing Aurizon Network's current cost estimates for each project which has been prepared subsequently to the preparation of the Capital Indicator) are outlined in the following table.

Project	HPX 3 (APR 11007)	Turnout Replacement Program (APR 12166)	WIRP – Stage 1 (APR 11115)
Contingency type	As a percentage of base costs (i.e. excluding contingency)		
Discipline and Risk Contingency	[redacted]		
Project Contingency			
Total Contingency			

12.23 The risk contingency included in the above is based on an assessment of project risks with a P90 figure (90% probability of the spend coming within budget based on risk assessment modelling) adopted for the updated budget for HPX 3 and a P75 figure (75% probability of the spend coming within budget based on risk assessment modelling) adopted for WIRP – Stage 1 (APR 11115).

12.24 The level of contingency included for HPX 3 & WIRP Stage 1 projects does not appear unreasonable.

Consideration of Stakeholder Submissions

12.25 No stakeholder submissions were identified that were relevant to the review of interest during construction.

Conclusion

12.26 Based on analysis undertaken, our conclusions are:

- The general polices adopted in the Investment Framework Manual and Estimating Procedure are considered reasonable and consistent with industry practice for civil / track projects. We note, however, that:
  - the Investment Framework Manual and Cost Estimating Procedure do not differentiate between various project types. For example, it would be expected that the cost accuracy or allocated contingency for system/technology projects would entail a higher level of variance/contingency compared to predominantly civil construction projects to allow for higher risks and uncertainties associated with system/technology projects.

- the approach for calculating the discipline and overall project level contingency is not articulated in the Cost Estimating Procedure. It appears that this is left to the judgement of the respective manager of the project. However, we have been advised that Project Management is governed by Project Risk Profiling (utilising monte carlo analysis), Independent Peer Reviews of Estimate, Investment Framework Policies and Project Management Manual which all act as controls to manage the quantum and type of contingencies factored into the project budgets. Furthermore, the WIRP Segment 2 NCL estimate was subject to further scrutiny as the total project spend was agreed and underwritten by customers through the execution of the WIRP Commercial Deed. The above process appears appropriate and mitigates the risk of contingency levels being inappropriately factored into capital estimates; and

- We have not been provided with sufficient information to enable us to ascertain with the Aurizon Network polices were applied for the sample of projects reviewed; and

- We have been advised by Aurizon Network that the Capital Indicator projects generally include discipline and risk contingency allowances, but do not include a general project contingency allowances. The Capital Indicator project forecasts are based on the most likely expenditure to occur based on the known schedule and scope of the project. Contingency budgets are only drawn down and forecasted once that risk becomes tangible and will be incurred.

12.27 On the basis of our review, the approach adopted by Aurizon Network in relation to the capital cost build-up, and its linkage to the investment framework and risk contingency measures appears reasonable.

13. Maintenance Submission - Return on Assets

Scope

13.1 RSMBC has been requested by QCA to:

- obtain a copy of Aurizon Network's return on assets calculations for the UT4 period and check the calculation for mathematical accuracy and, where applicable, trace the calculations back to source documents;
- review the methodology employed by Aurizon Network to ensure that only assets relevant to maintenance activities have been included within the return on assets calculation;
- discuss with Aurizon Network the logic for the utilisation of Gross Replacement Value in the calculation of the return on assets rather than book value and provide an opinion in relation to the reasonableness of this approach;
- assess the impact on the return on asset costs of the utilisation of asset's book values instead of the Gross Replacement Value; and
- request Aurizon Network's supporting documentation for the Real Pre-Tax Weighted Average Cost of Capital utilised in the calculation and undertake a high level assessment of reasonableness based on the proposed Regulatory Weighted Average Cost of Capital proposed by Aurizon Network.

13.2 As part of the above process, RSMBC has been requested by QCA to consider relevant submissions from QRC, Asciano, BMA and BMC and RTCA.

Background

13.3 The Aurizon Network UT4 maintenance submission includes, in addition to direct maintenance costs and maintenance division corporate overheads, a charge in relation to return on fixed assets employed for maintenance activities, together with a return on inventory and working capital, as set out in the table below (in Real FY 2012 dollars).

($'million)	FY14	FY15	FY16	FY17
Return on Assets	23.408	30.191	31.724	31.724
Return on Inventory	1.206	1.206	1.206	1.206
Return on Working Capital	1.079	1.163	1.197	1.218
Total*	25.693	32.560	34.127	34.148

* The total return on assets, working capital and inventory charge over the UT4 period is disclosed within the UT4 maintenance submission as both depreciation charges of the AM and STS division amounting of $78.233 million (note – table 22, page 112 of the UT4 Maintenance Submission only discloses depreciation costs of the STS division of $72.501 million and does not disclose depreciation costs of the AM division of $5.732 million) and the return on assets charge of assets, working capital and inventory charge of $48.295 (Table 21, page 111 of the UT4 Maintenance Submission).

13.4 Return on assets ("ROA") relates to assets used in two areas:

- The specialised track services ("STS") group, delivers specialised below rail major maintenance and reconstruction; and
- The asset maintenance ("AM") group – undertakes all infrastructure inspection, corrective and reactive maintenance not undertaken by Specialised Track Services.

13.5 The asset costs used as the basis for the return on assets calculation proposed by Aurizon Network are based on:

- the Gross Replacement Value ("GRV") of assets utilised rather than the book value of assets;
- a Real Pre-Tax Average Cost of Capital of 6.83%; and
- a reduction for accounting depreciation charges included within the direct maintenance costs.

13.6 The return on assets charges proposed by Aurizon Network amounts to circa $39 million (net of depreciation) over the UT4 period, with approximately [redacted]% of the total cost relating to assets of the STS group.

13.7 In prior access undertaking agreements, the ROA calculation has been applied to historical cost written down value of assets.

13.8 The GRV approach involves calculating a return on assets, where the asset values are represented by "*the current cost to replace existing assets with assets that have the capacity to provide the level of service that meets the actual and reasonably projected demand and are, if appropriate, modern equivalent assets*"[38].

13.9 Modern equivalent asset ("MEA") reflects a theoretical asset with which an existing asset's service potential could be restored with modern technology. In practice, the MEA reflects any differences between the productive capacity of a new asset compared to an existing asset.

13.10 An annuity stream, representing the required return on assets is derived from the GRV values. The annuity stream is calculated having regard for the useful economic life of the asset and applying an appropriate discount rate.

[38] A brief comparison of the WA Rail Access Code approach to calculating ceiling cost with the conventional Depreciated Optimised Replacement Cost Methodology.

RSMBC Findings

Mathematical accuracy of the ROA calculation and supporting information

13.11 RSMBC has undertaken a review of Aurizon Network's ROA calculation and conclude that it is mathematically accurate with the following exception:

- In respect of motor vehicles in the STS and AM groups, Aurizon Network utilises an asset life of 90 to 99 years. This has resulted in an understatement of the ROA as a result of the useful economic lives of motor vehicles being overstated. Aurizon Network has advised that the typical useful lives of these assets ranges from between 6 and 17 years. Utilising a midpoint of these lives of 11.5 years, as set out in the table below, would result in an increase to the ROA would increase by circa $1.8 million per year from FY 2014 to FY 2017.

Motor vehicles	GRV Annuity 90 to 99 year useful life $	GRV Annuity 11.5 year useful life $	Potential increase in ROA $
STS	437,000	820,000	383,000
AM	1,589,000	2,981,500	1,392,500
Total	**2,026,000**	**3,801,500**	**1,775,500**

13.12 The values assigned to assets under the GRV methodology adopted by Aurizon Network reflect the historical cost of asset purchases, except where significant assets are to be purchased over the UT4 period. Where assets are to be purchased over the UT4 period, Aurizon Network has valued the assets at the expected acquisition cost or, where applicable, at the MEA of the existing assets. The table below sets out a summary of assets to be valued at a value other than historical cost:

Asset description	Division	Asset number	Assigned Value $
Cleaner ballast high production machine	STS	MMY021	33,000,000
Mainline tamper	STS	MMA070	15,000,000
Mainline tamper	STS	MMA062	15,000,000
Mainline tamper	STS	MMA055	15,000,000
Mainline tamper	STS	MMA056	15,000,000
Mainline tamper	STS	MMA072	15,000,000
Switch tamper	STS	MMA059	13,000,000
Switch tamper	STS	MMA076	13,000,000
Wagons	STS	MMC010	9,000,000
Total			**143,000,000**

13.13 The existing ballast cleaner has a historical cost of $7.3 million. The replacement cost assigned by Aurizon Network of $33 million is based on the following:

- purchase of new ballast cleaner at a cost of circa $39.7 million, excluding contingencies (projected to be made outside the UT4 regulatory period); and
- the capital investment approval request[39] prepared by Aurizon Network in relation to the new ballast cleaner states that the new ballast cleaner is expected to operate at 113% of the capacity of the current machine. Accordingly, the MEA of the existing machine is $35.1 million and therefore, the replacement cost assigned by Aurizon Network does not appears unreasonable.

13.14 The two switch tamping machines are expected to be operational from October 2013, replacing two existing machines. The cost of the new machines is materially consistent with capital expenditure planning documentation provided by Aurizon Network.

13.15 The five mainline tamping machines will be brought on-line progressively from October 2014 to July 2015, replacing existing machines. The cost of the new machines is materially consistent with capital expenditure planning documentation provided by Aurizon Network.

13.16 Aurizon Network proposes to acquire wagons with a value of $9 million with circa $6 million of wagons to be commissioned in FY 2014 and $3 million to be commissioned in FY 2015. The purchase of the wagons is consistent with the forecast maintenance set out in the "High level and detailed review of forecast maintenance cost" report prepared by SKM.

13.17 We recommend that QCA undertakes a periodic review of the STS and AM assets over the UT4 period to ensure that the forecast asset purchases are undertaken in accordance with UT4. To the extent that assets included in UT4 are not acquired by Aurizon Network, the actual return on assets over the UT4 period should be adjusted accordingly.

[39] Stage Gate Process: Capital expenditure Feasibility Investment Approval Request – Ballast Fouling Removal Project – Ballast Cleaning Fleet Tranche 2 – November 2013

Asset classification methodology

13.18 The ROA calculation is based on data extracted from the Aurizon Network fixed asset register. Aurizon Network has extracted asset information for cost centres relevant to STS and AM. In respect of STS, assets are classified by ballast cleaning, resurfacing and rail grinding.

13.19 On the basis of our review, we consider that only assets relevant to maintenance activities have been included in the ROA calculation.

13.20 The GRV methodology assumes that assets are always in "as new" condition. Therefore, the costs incurred in respect of major periodic maintenance (maintenance to restore assets to an as new condition,) should be excluded under the GRV methodology.

13.21 Aurizon Network has advised that major periodic maintenance is excluded from the maintenance cost allowance. We have made enquires of SKM as to whether the maintenance costs exclude major periodic maintenance, however, as at the date of this report, we have not been able to obtain confirmation as to the nature of maintenance costs included.

13.22 To the extent that Aurizon Network are compensated for major periodic maintenance in respect of STS and AM assets, the compensation will be overstated under the GRV methodology.

13.23 Aurizon Network has advised that, in the event that the GRV methodology is not adopted, Aurizon Network will seek to include an allowance for major periodic maintenance on STS and AM assets.

Utilisation of Replacement Cost

13.24 In UT3, Aurizon Network calculated the return on maintenance assets by applying a rate of return to the written down book value of assets (return on capital), plus a depreciation charge (return of capital).

13.25 Aurizon Network has stated that it considers this approach to be flawed as the asset charges that result from this approach would not be expected to prevail in a competitive market. Aurizon Network considers that the return on assets should be based on replacement cost, rather than historical written down value, for the following reasons:

- many of the maintenance services undertaken by Aurizon Network are contestable. However, the services are provided internally on the basis that users of the declared service benefit through economies of scale in plant and people and economies of scope in expertise. On this basis, Aurizon Network considers that the efficient price for maintenance should reflect the price that would prevail in an efficient market;
- a return on assets calculation based on historical written value does not reflect the cost that would be expected to prevail in an efficient market; and
- replacement costs appropriately reflect the opportunity costs of providing the maintenance services.

13.26 In considering whether the adoption of replacement cost as a basis for the calculating return on assets is reasonable, we have had regard to the following matters:

- on the basis that the return on assets should reflect a return that compensates Aurizon Network for the commercial risks involved in providing the maintenance service, it is reasonable that the return on assets calculation be based on an estimated market return;
- historical written down asset values reflect the depreciated historical cost of the assets. Consequently, a return based on the written down value of the assets will not necessarily be consistent with value of those assets to a third party service provider. In a competitive environment, service providers can be expected to price their services having regard for the opportunity costs of utilising the assets to provide the maintenance services; and
- the use of replacement costs takes account of the opportunity costs of utilising the assets to provide the maintenance services.

13.27 Having regard for the matters set out above, we consider that it is reasonable to utilise the replacement cost of assets rather than historical cost written down values as the basis for the calculation of return on assets.

Impact of replacement cost v historical cost

13.28 We have assessed the impact over the UT4 period on the return on asset costs of the utilisation of asset's book values instead of the GRV by estimating the return on assets that would be generated in the event that historical cost written down value was utilised.

13.29 It should be noted that that the assessment below does not include an allowance for the major periodic maintenance costs that would be reflected within maintenance costs under the historical cost written down value methodology (but not under the GRV methodology) as we have not been provided with, nor are we able to make an accurate estimate of, these costs. The major periodic maintenance costs would need to be deducted from the difference in the following table to fully assess the difference of the change in methodologies over the UT4 period.

13.30 The table below sets out a summary of the comparison of the return on assets generated utilising GRV and historical cost written down value (in Real FY 2012 dollars).

	FY 2014 $	FY 2015 $	FY 2016 $	FY 2017 $	Total $
GRV methodology					
Return on assets	[redacted]				
Less depreciation					
Return on assets net of depreciation	8,488,905	10,396,151	10,027,381	9,900,862	38,813,299
Historical cost methodology					
Historical cost (WDV) opening balance	[redacted]				
Plus additions					
Less disposals					
Less depreciation					
Historical cost (WDV) closing balance					
Return on assets (WACC 6.83%)	4,777,796	8,471,509	6,989,645	5,499,139	25,738,089
Net difference before allowance for Major Periodic Maintenance *	3,711,109	1,924,642	3,037,737	4,401,723	13,075,211

** the cost of major period maintenance of maintenance assets is required to be deducted from the above net difference to reflect the full impact on costs over the UT4 period*

13.31 In estimating the return on assets utilising historical cost written down values we have made the following assumptions:

- historical cost written down asset values are sourced from the corporate fixed asset register provided by Aurizon Network;
- depreciation is sourced from the UT4 maintenance submission 30 April 2013;
- asset additions are consistent with the asset additions disclosed by Aurizon for the purposes of the GRV calculation as set out in paragraph 2.10. The purchase of the ballast cleaner (GRV of $33 million) is excluded from the historical cost methodology on the basis the new machine is not scheduled to be commissioned until FY 2018. Interest charges during construction of the ballast cleaner have not been considered in our calculation; and
- disposals represent the written down value of the assets replaced by the asset additions.

13.32 The historical cost methodology should include an allowance for major periodic maintenance. As set out in paragraph 13.29, we are unable to quantify the appropriate allowance. The inclusion of an allowance for major periodic maintenance would increase the return available to Aurizon Network under the historical cost methodology.

Pre-Tax Weighted Average Cost of Capital

13.33 We have reviewed supporting documentation provided by Aurizon Network for the Real Pre-Tax WACC utilised in the GRV calculation and undertaken a high level assessment of reasonableness based on the Regulatory WACC proposed by Aurizon Network. The reconciliation from the Regulatory WACC proposed by Aurizon Network to the Real Pre-Tax WACC is set out in the table below.

Real pre tax WACC	
Capital structure (Debt%)	55%
Inflation rate	2.50%
Effective tax rate	22.50%
Post tax nominal cost of equity	10.15%
Pre tax nominal cost debt	6.56%
Weighted post tax cost of equity	4.57%
Weighted pre tax cost of debt	3.61%
Vanilla WACC	**8.18%**
Weighted Pre tax nominal cost of equity (Weighted post tax cost of equity / (1-effective tax rate))	5.89%
Weighted pre tax nominal cost of debt	3.61%
Nominal pre tax WACC	**9.50%**
Real pre tax WACC [(1+ pre tax WACC) / (1+inflation rate)-1]	**6.83%**

13.34 Aurizon Network has adopted a "Vanilla WACC" of 8.18% as the proposed regulatory WACC. The Vanilla WACC comprises a post-tax nominal cost of equity and a nominal pre-tax cost of debt.

13.35 In calculating the return on assets using the GRV methodology, Aurizon Network has utilised a real pre-tax WACC of 6.83%.

13.36 The real pre-tax WACC of 6.83% is calculated on a consistent basis with the Vanilla WACC after adjusting for the following:

- adjusting the nominal post-tax cost of equity to reflect a real pre-tax cost of equity assuming an effective tax rate of 22.5% (incorporating the impact of franking credits) and an inflation rate of 2.5%; and
- adjusting the nominal pre-tax cost of debt to reflect a real pre-tax cost of debt assuming an inflation rate of 2.5%.

13.37 On the basis that the real pre-tax WACC of 6.83% is calculated on a consistent basis with the Vanilla WACC, we consider that the WACC used to calculate the return on assets under the GRV methodology is reasonable. Any change to the regulatory Vanilla WACC of 8.18% would require the above real pre-tax WACC of 6.83% to be adjusted, accordingly.

Consideration of Stakeholder Submissions

QRC, RTCA & BMA/BMC

13.38 QRC raised a concern with "Modern Equivalent Asset" approach stating that not only should the asset value be adjusted for differing productivity between modern and old equipment, but operating and maintenance costs should also be adjusted.

13.39 QRC contended that the written down value of the asset should be used along with its commensurate operating costs.

13.40 QRC also raised that, to the extent that return on asset includes a return on additional assets that are forecast to be purchased, it is important to include a mechanism to ensure that this component of the charge is excluded from the cost build up if these assets are not purchased as per the forecast (as occurred in UT3).

13.41 QRC's submission was supported by RTCA in its submission.

13.42 BMA/BMS raised an issue that the use of modern equivalent asset values creates significant complexities with respect to the estimation of the maintenance costs of new machines (relative to the existing fleet) and this needs to be taken into account.

RSMBC Comments

13.43 RSMBC considers that the approach proposed by Aurizon Network is reasonable on the basis that:

- the return on assets should reflect a return that compensates Aurizon Network for the commercial risks involved in providing the maintenance service, it is reasonable that the return on assets calculation be based on an estimated market return;
- historical written down asset values reflect the depreciated historical cost of the assets. Consequently, a return based on the written down value of the assets will not necessarily be consistent with value of those assets to a third party service provider. In a competitive environment, service providers can be expected to price their services having regard for the opportunity costs of utilising the assets to provide the maintenance services; and
- the use of replacement costs takes account of the opportunity costs of utilising the assets to provide the maintenance services.

13.44 RSMBC has highlighted that major periodic maintenance costs under the proposed approach are not to be included within the maintenance costs allowance. We have been advised by Aurizon Network that major periodic maintenance costs are excluded from maintenance costs. However, as at the date of this report, we have not been able to obtain confirmation of this statement.

13.45 RSMBC agrees that there is a needs to be a mechanism to ensure that the asset acquisitions utilised for prepare the ROA calculations are acquired at or around the forecast dates. A recommendation has been raised to QCA accordingly.

Conclusion

13.46 We consider that it is reasonable to utilise the replacement cost of assets rather than the historical written down values as the basis for the calculation of return on assets.

13.47 We have reviewed the mathematical accuracy of Aurizon Network's calculation and noted that the ROA on motor vehicles has been understated due to the utilisation of useful lives for these assets of 90 to 99 years.

13.48 In the event that Aurizon Network adopted a 6 to 17 year useful life for motor vehicles rather than asset lives of 90 to 99 years, the ROA would increase by circa $1.8 million per year (estimated based on the mid-point asset life of 11.5 years) from FY 2014 to FY 2017.

13.49 We have reviewed the calculation of the GRV for material assets within Aurizon Network's calculations and consider that calculations as reasonable.

13.50 We consider that only assets relevant to maintenance activities have been included in the ROA calculation.

13.51 The GRV methodology assumes that assets are always in "as new" condition. Therefore, the costs incurred in respect of major periodic maintenance should be excluded under the GRV methodology. We have been advised by Aurizon Network that major periodic maintenance costs are excluded from maintenance costs. However, as at the date of this report, we have not been able to obtain confirmation of this statement. We recommend that QCA obtain confirmation that major periodic maintenance costs are not included in respect of STS and AM assets.

13.52 We recommend that QCA undertake a periodic review of the STS and AM assets over the UT4 period to ensure that the forecast asset purchases are undertaken in accordance with UT4. To the extent that assets included in UT4 are not acquired by Aurizon Network, the actual return on assets over the UT4 period should be adjusted accordingly.

13.53 We estimate that the difference in the overall UT4 costs from adopting the GRV methodology rather than historical cost is up to $13 million over the UT4 period. However, this assessment does take into account the allowance for the major periodic maintenance costs that would be reflected within maintenance costs under the historical cost written down value methodology (but not under the GRV methodology) as we have not been provided with, nor are unable to make an accurate estimate of, these costs. The major periodic maintenance costs would need to be deducted from the difference to fully assess the difference of the change in methodologies over the UT4 period.

13.54 We consider the real pre-tax WACC of 6.83% is calculated on a consistent basis with the Vanilla WACC, we consider that the WACC used to calculate the return on assets under the GRV methodology is reasonable. Any change to the regulatory Vanilla WACC of 8.18% would require the above real pre-tax WACC of 6.83% to be adjusted, accordingly.

14. Maintenance Submission - Return on Inventory and Working Capital

Scope

14.1 RSMBC has been requested by QCA to:

- request copies of Aurizon Network's calculations for the assigning of inventory values to below rail coal activities and assess for reasonableness, mathematical accuracy and, for a sample of items test the calculations back to supporting documentation;
- request copies of Aurizon Network's calculations for the return on working capital and assess for reasonableness and mathematical accuracy; and
- through discussions with Aurizon Network, assess the reasonableness of Aurizon Network's proposed return in inventory charges in light of the proposed change in modelling to include no intra-year cash flows which, prima facie, negates the need for a working capital / inventory allowance.

14.2 As part of the above process, RSMBC has been requested by QCA to consider relevant submissions from QRC, Asciano, BMA and BMC and RTCA.

RSMBC Findings

14.3 Aurizon Network has included the following costs in relation to Returns on Inventory and Working Capital within its UT4 maintenance cost forecasts (in Real FY 2012 dollars).

($'million)	FY14	FY15	FY16	FY17
Return on Inventory	1.206	1.206	1.206	1.206
Return on Working Capital	1.079	1.163	1.197	1.218
Total	**2.285**	**2.369**	**2.403**	**2.424**

Source: Aurizon Network UT4 maintenance submission and Aurizon Network calculations

14.4 RSMBC noted that in Volume 3 of the 2013 Draft Access Undertaking, Aurizon Network has proposed a change in the modelling framework for UT4, compared to UT3. The UT3 model assumed all costs and revenues are incurred at the end of the year. The free cash flow (or post-tax revenue) is then discounted by half the WACC based on the assumption that revenue is recovered uniformly across the year and therefore available for reinvestment. Currently, a working capital allowance is applied to recognise the need to manage these intra-year cash flows.

14.5 Under the proposed modelling framework, no intra-year discounting is applied. However, the need for a working capital allowance is no longer required. Aurizon Network states on page 275 of Volume 3 of the 2013 Draft Access Undertaking that it has therefore, not included a working capital allowance in its proposed operating expenditure allowance for UT4.

14.6 The inclusion of a Return on Inventory and Return on Working Capital in the maintenance component of the operating expenditure forecast appears, prima-facie, contradictory to the above statement as the definition of working capital is generally accepted to include inventory.

14.7 RSMBC sought clarification from Aurizon Network in relation to the above. Aurizon Network has advised that the 'working capital allowance' related to the UT3 methodology requiring Aurizon Network to be compensated for the volatility inherent in the intra year cash flows, due to the UT3 modelling assuming smooth cash flows across the year with no volatility. This compensation for the volatility in the cash flows was termed as a "Working Capital Allowance". The terminology of "Working Capital Allowance" did not represent a return on working capital. RSMBC has confirmed the above statement with QCA.

14.8 On the basis of the above, we consider it reasonable for Aurizon Network to include a return on working capital and inventory within the maintenance costs claim.

Calculation of return on inventory

14.9 Aurizon Network advised that the following steps were undertaken to calculate the value of maintenance related inventory and associated the return on inventory:

- the 30 June inventory balance for all of Aurizon Network was extracted from the SAP inventory system, by depot/location;
- from this, the maintenance depots/locations were identified, as either maintenance-dedicated depots (100% of the stock is used in network maintenance), or locations where the inventory is used for more than just network maintenance works;
- for 100% maintenance depots, the CQCN inventory value was estimated, based on the share of FY12 labour hours booked to CQCN maintenance works (as opposed to, for example, works for Queensland Rail or minor capital works). The outcome of this was that 52% of the inventory balance was deemed to be for CQCN maintenance. The one exception to this was the Rail Services depot at Paget, which is 100% dedicated to the CQCN;
- for shared depots, the maintenance usage was obtained from the materials and logistics accountant. Based on the maintenance usage, it was assessed that 55% of the stock was used for maintenance (45% for capex). Therefore, the CQCN maintenance component was set at 29% for these plants (55% of 52%);
- the exception to the above is the concrete sleeper depot at Rockhampton, where on advice from the materials and logistics accountant, the maintenance allocation was reduced to 20%, to reflect the fact that the sleepers are mainly used for capital works; and
- the result of the above was that $17.6 million of the $42.1 million of inventory on hand was assigned to CQCN maintenance (42%).

14.10 The real pre-tax WACC of 6.83% was then assigned to the $17.6 million to arrive at a Return on Inventory figure of $1.206 million.

14.11 RSMBC has reviewed Aurizon Network's calculations underpinning the above calculation and no issues have been noted. We therefore consider the return on inventory calculation to be reasonable.

14.12 As noted in paragraph 13.37, on the basis that the real pre-tax WACC of 6.83% is calculated on a consistent basis with the Vanilla WACC, we consider that the WACC used to calculate the return on inventory is reasonable. Any change to the regulatory Vanilla WACC of 8.18% would require the above real pre-tax WACC of 6.83% to be adjusted accordingly.

Calculation of return on working capital

14.13 Aurizon Network advised that the working capital allowance was calculated as the average monthly maintenance costs multiplied by the real pre-tax WACC of 6.83% as set out in the table below.

($'million)	FY 2014	FY 2015	FY 2016	FY 2017
Annual maintenance costs	189.51	204.26	210.33	213.92
Monthly maintenance cost	15.79	17.02	17.53	17.83
Return on Working Capital at 6.83%	**1.079**	**1.163**	**1.197**	**1.218**

(FY 2012 Real Dollars)

14.14 Aurizon Network advised that the assumption that one month of costs are required to be funded was on the basis on the average credit terms Aurizon Network has with its customers and therefore represents the time difference between when work is completed, and when payment is received.

14.15 The above calculation does not appear to take into account consideration of credit terms Aurizon Network has with its external maintenance providers. For maintenance work undertaken by internal labour, the costs related to the work will be paid at approximately the same time as the work is incurred (dependant on the frequency that employees are paid). However, for some externally procured services, we would expect that an entity the size of Aurizon Network, would negotiate credit terms with external suppliers such that there is also a lag between when goods are supplied, or work is undertaken, and when Aurizon Network pays for these supplies or work.

14.16 Therefore, we consider that the return on working capital calculation should be reduced to reflect supplier payment terms.

14.17 Table 23, page 113 of the UT4 maintenance submission, Aurizon Network disclosed that 51% (FY 2014) to 52% (FY 2015 onwards) of maintenance costs are from externally procured resources.

14.18 We therefore consider it reasonable that the return on working capital allowance be reduced by 51% to 52%.

14.19 The revised return on working capital would consequently be as set out below.

($'million)	FY 2014	FY 2015	FY 2016	FY 2017
Return on Working Capital at 6.83%	**0.529**	**0.558**	**0.575**	**0.585**

(FY 2012 Real Dollars)

14.20 As noted in paragraph 13.37, on the basis that the real pre-tax WACC of 6.83% is calculated on a consistent basis with the Vanilla WACC, we consider that the WACC used to calculate the return on inventory is reasonable. Any change to the regulatory Vanilla WACC of 8.18% would require the above real pre-tax WACC of 6.83% to be adjusted, accordingly.

Consideration of Stakeholder Submissions

14.21 No stakeholder submissions were identified that were relevant to the review of return on working capital and inventory.

Conclusion

14.22 Based on the work undertaken we consider that the:

- proposed return on inventory included within the UT4 maintenance submission appears reasonable; and
- proposed return on working capital included within the UT4 maintenance submission should be reduced to reflect the supplier credit terms that Aurizon Network would be able to obtain in relation to externally procured resources.

14.23 Table 23, page 113 of the UT4 maintenance submission, Aurizon Network disclosed that 51% (FY 2014) to 52% (FY 2015 onwards) of maintenance costs are from externally procured resources. Consequently, we consider that the return on working capital should be amended to the costs set out below.

($'million)	FY 2014	FY 2015	FY 2016	FY 2017
Return on Working Capital at 6.83%	0.529	0.558	0.575	0.585

(FY 2012 Real Dollars)