



Catherine Barker
Director Business Performance
Queensland Competition Authority
Level 27, 145 Ann Street
Brisbane QLD 4001

31 October 2016

Dear Catherine,

Review Event Submission - Central Queensland Flooding 2016

Please find enclosed Aurizon Network's submission to the Queensland Competition Authority (QCA) on the proposed cost recovery mechanism and resulting tariff impacts, which are necessary for Aurizon Network to allow cost recovery of incremental maintenance cost for the Goonyella system flood repair works following the February 2016 floods.

Aurizon Network is seeking to claim incremental maintenance costs incurred as a direct result of the flood rectification work through the provisions set out in Aurizon Network's 2016 Access Undertaking (2016AU), specifically clause 5.3 of Schedule F, in the form of a Review Event.

This claim relates to incremental maintenance expenditure of \$2,017,881 expressed FY2016 dollars incurred in the Goonyella system.

Input assumptions for tonnages and escalation are based on 2016AU assumptions. Aurizon Network's UT5 submission, for the FY2018 to FY2021 regulatory period is due to be submitted to the QCA on 30 November 2016. It is proposed that the variation in Reference Tariffs from the 2016 Review Event be applied to the FY2018 Reference Tariffs that are approved by the QCA and in place for the period 1 July 2017 to 30 June 2018.

Detailed calculations supporting the cost recovery options and tariff impacts have been provided in soft copy form. Consistent with past submissions, Aurizon Network requests that the supporting models are not published as they contain confidential customer tonnage information.

Should you have any queries in relation to this submission, please do not hesitate to contact Michelle De Saram via Michelle.DeSaram@aurizon.com.au

Kind regards,

A handwritten signature in dark ink, appearing to read "Donna Bowman", with a long horizontal flourish extending to the right.

Donna Bowman
Network Regulation Manager (Access Undertaking)
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Aurizon Network Access Undertaking (2016)

Review Event Submission - Central Queensland Flooding 2016

31 October 2016



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Executive Summary

Overview

- In February 2016, Aurizon Network's Goonyella System suffered extensive flood damage as a result of a severe weather event
- Aurizon Network is seeking QCA approval for a variation to Goonyella system reference tariffs to recover its incremental maintenance costs resulting from this event of \$2,017,881 expressed in FY2016 dollars
- Aurizon Network proposes that the increase in Goonyella System reference tariffs is smoothed over FY2018

Background

On 5 February 2016, a severe weather event occurred in the Central Queensland Coal Region (CQCR) bringing heavy rainfall which subsequently lead to flooding and track washouts across the Goonyella and Newlands Systems. Aurizon Network declared Force Majeure for both the Goonyella and Newlands systems on Friday 5 February 2016.

Temporary repairs were made to enable the safe passage of traffic The Newlands system was safely reopened for traffic at 2240 hours on 5 February 2016 and Goonyella system at 1535 hours on 10 February 2016 with a 25kph speed restriction in place.

The Goonyella line from Broadlea to Coppabella was the most heavily damaged location and experienced major track washouts. Aurizon Network incurred substantial costs in reinstating the Goonyella system to pre-flood condition.

Aurizon Network is seeking to claim incremental maintenance costs incurred as a direct result of the flood rectification work in the Goonyella system through a Reference Tariff variation in accordance with its 2016 Access Undertaking (2016AU).

This claim relates solely to the recovery of the incremental maintenance costs incurred as a result of the flood damage in the Goonyella system. Flood damage in the Newlands system was minor, is not included in this claim and will not be the subject of a separate claim.

Given the extent of the damage and rectification effort, all works could not be completed nor final costs be established within 60 day time limit for a Review Event (2016AU, Schedule F Part 5, Clause 5.1(a)(ii)(A)). Therefore on 1 April 2016, Aurizon Network applied for an extension of time to submit this Reference Tariff Variation for approval and the QCA granted an extension of time until 31 October 2016.

1. Introduction

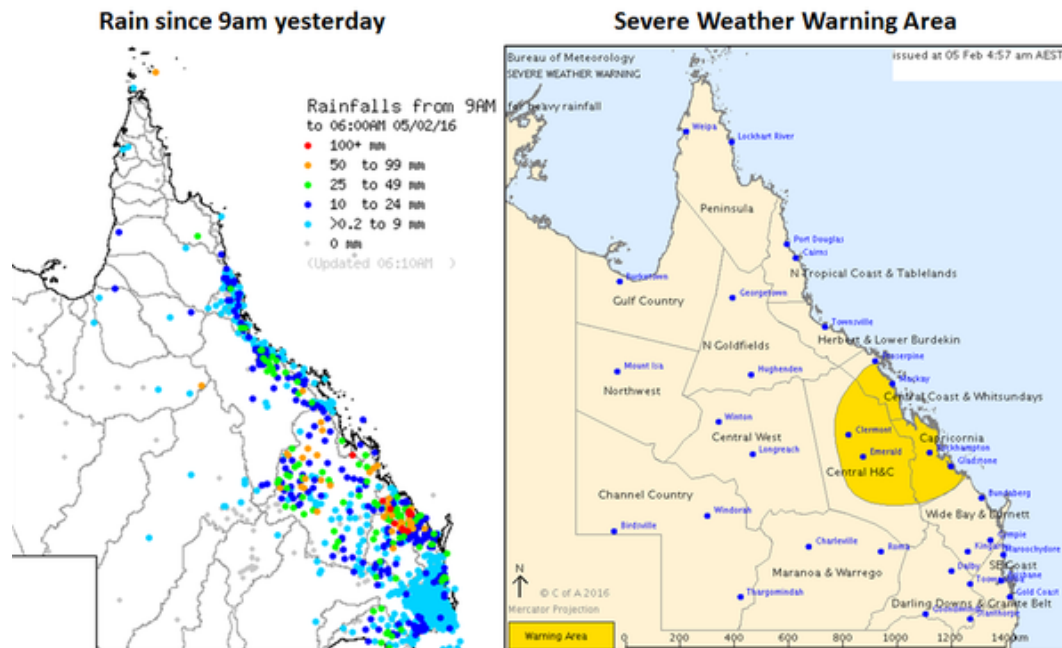
1.1 Purpose

Aurizon Network is submitting this Review Event claim to the QCA for approval following the flood damage caused to the Central Queensland Coal Region (CQCR) as a result of a severe weather event which caused extreme flooding, resulting in major washout of rail infrastructure (2016 CQCR Flooding). In accordance with of Schedule F, Part 5, Clause 5.3 of the 2016AU, this section provides evidence that the Review Event has occurred, and highlights the impact on the CQCR.

1.2 Background

The Bureau of Meteorology issued a severe weather warning at 0457 hours 5 February 2016² for heavy rainfall and possible flooding affecting the CQCR. Aurizon Network subsequently increased the risk level in the CQCR to NETCON 3 – Potential Threat Alert at 1200 hours and all internal and external stakeholders and customers were notified of possible disruptions to the network. NETCON 3 results in an upgraded level of preparation for the network. In preparation for poor weather, district maintenance teams ceased undertaking critical maintenance activities and were stood down and placed on call.

A strong surface trough moved north through Central Coast, Central highlands and Coalfields districts causing heavy rainfall and flooding. During the following 24 hour period, Goonyella and Newlands regions experienced significant rainfall, with over 300mm recorded in some areas¹. At 0530 hours 6 February, road patrols across the region commenced to report on the condition of the network.



¹ BOM Severe Weather Events Page, posted on 5 February 2016

² BOM Severe Weather Events Page, posted on 5 February 2016

1.3 Impact on the CQCR

The flood event had a significant impact on Aurizon Network's rail infrastructure. Services in the Goonyella and Newlands coal systems were suspended on the afternoon of 5th of February 2016, with Force Majeure declared for the Goonyella and Newlands systems. This process was executed in line with Aurizon Network's Incident Management Procedure, which prepares and responds to Incidents in the Network.

The rain further impacted the recovery activities in the Goonyella system. The Goonyella system opened at 1535 hours on 10 February 2016, but a 25kph speed restriction was applied and remained until major track formation and track reconstruction could be completed in the April 36hr system closure. The Goonyella system sustained major infrastructure damage, with large washouts of track located throughout the entire system (see figure 1 below). The system map indicates those sections which were affected and required repair work to be performed to enable the running of trains services on the network.

Figure 1 – CQCR Goonyella System – Flood affected locations



On Saturday 6 February 2016, road patrols across the Goonyella system commenced to report in the condition of the network. Major washouts were identified from Macarthur to Coppabella (figure 2) and Coppabella to Broadlea (figure 3). The images below depict the damage sustained. Further images can be made available to the QCA upon request.

Figure 2 Macarthur to Coppabella Up and Down Roads

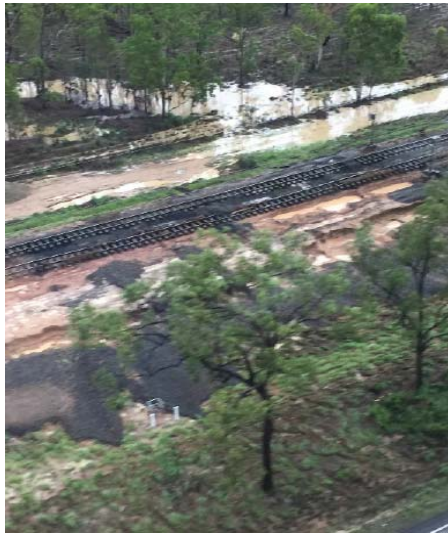


Figure 3 Coppabella to Broadlea Up and Down Roads



Aurizon Network responded quickly and effectively to inspect infrastructure for damage after the weather event and prepared recovery operations in each impacted rail system. Aurizon Network worked with the supply chain to provide transparency of recovery efforts and provide information on the resumption of railings as soon as the network could be made operationally safe.

2. Aurizon Network's response to severe weather event

2.1 Purpose

This section sets out how Aurizon Network responded to the severe weather event and the subsequent flooding in the CQCR. Aurizon Network's aim was to ensure interruptions to the supply chain were minimised and to keep the supply chain well informed during and after the Flood Event.

2.2 Keeping the supply chain informed

Aurizon Network engaged with supply chain participants by providing regular supply chain briefings in the period leading up to and after the severe weather event. The briefings were aligned with the escalation of NETCON preparation levels as they affected the different systems. These briefings continued to be provided to impacted stakeholders until all systems resumed operations.

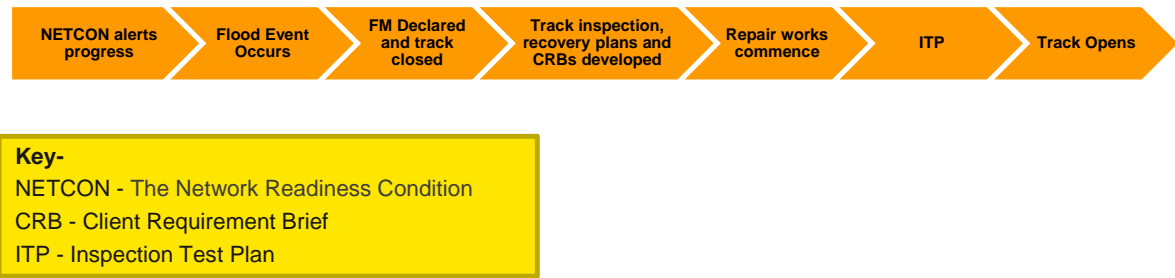
In parallel with the Supply Chain Briefings, Aurizon Network provided communications via its Control Centre through its Form 103 process, which is a notice sent out to all affected supply chain participants of a significant event occurring and resulting delays to train services. Also the Control Centre has set up regular phone hook-up meetings for North and South systems supply chain participants.

2.3 Aurizon Network Incident Management Procedure

The CQCR has recently experienced a number of cyclones and floods in summer which can cause extensive damage to the Network. As a consequence, the network has been designed to a specification suitable for tropical environmental conditions. Over time, a range of preventative measures have been implemented in areas prone to flooding throughout the system to minimise damage to infrastructure and the safe running of trains. This enabled Aurizon Network respond in an effective and efficient manner to the Flood Event.

Aurizon Network has a proven capability to respond to Force Majeure (FM) events, which ensures the safe and timely restoration of the network. The response to the Flood Event, was coordinated under Aurizon Network's Incident Management Procedure, which is supported by the operational practices controlled by the Asset Management, Asset Maintenance, Engineering and Project Delivery, Specialised Track Services and Construction Services teams. The operational practices followed under Network Operations Incident Management Procedure is illustrated in Figure 4 below.

Figure 4: Network Operations Incident Management Procedure



NETCON activated

NETCON is an alert state used by Aurizon Network in the CQCR for events that have the potential to affect the condition of network. The NETCON alerts are communicated to all members of the supply chain, including ports, mines and operators. These events are typically classified as ‘natural events’ such as cyclones or sustained weather events, which can be predicted prior to their onset. A series of NETCON levels 1–5 have been established to identify what actions need to be taken by the Network Operations Management Team.

In recognition of the impact that these events can have on the network, Aurizon Network makes preparation leading up to the traditional wet weather season. Pre wet season checks on inventory supplies and assets general condition commences in September each year and a review is conducted in November. Some of the activities on the checklist include drainage inspections, vegetation growth management, ballast supplies and placement, culvert clearing, inspecting rail and sleepers and flood rock supplies.



When Aurizon Network were alerted of the severe weather warning, a NETCON 3 – Potential Threat Alert was activated 1200 hours on 5 February 2016 and network preparation was underway for the weather event. The alert gives an opportunity to check diesel generators, backup systems, inform supply chain participants, reassess maintenance closures, alert suppliers, and raise the level of internal alertness.

2.4 Extent of the flood damage to the Goonyella system

2.4.1 Goonyella flood recovery efforts - return to running

After the weather event subsided, track inspections were carried out by Track Inspectors and Engineers to assess damage to assets. A Helicopter inspection was carried out which allowed Infrastructure Maintenance to inspect the Network thoroughly. After the initial flood damage was assessed, response plans commenced development along with arrangements for mobilisation of staff, engineers and contractors. The Flood Recovery plans were drafted by Network Operations in consultation with rail operators and other stakeholders in the affected supply chain.

The following outlines a list of locations across the Goonyella system which were affected by the flood and have been included in this claim:

- Macarthur to Coppabella
- Coppabella to Broadlea
- Yukan to Black Mountain
- Saraji Balloon to Lake Vermont
- Jilalan to Yukan
- Daly Bay and Hay Point
- Peak Downs to Harrow
- OakyCreek

Details of the damage to CQCR

Macarthur to Coppabella and Coppabella to Broadlea experienced severe track washouts which was the main priority for rectification. Other parts of the Goonyella system experienced damage which consisted of the following;

- Fencing damage
- Wash away of ballast
- Culvert scouring
- Debris
- Access roads washout and damage
- Drain blockages

Overview of Tasks undertaken to rectify the Network

Debris and trees had to be removed off track and fences across all affected areas of the Goonyella system.

The Infrastructure Maintenance teams assessed the damage at Coppabella to Macarthur (138.700km – 139.170km) figure 5 below. Minimal ballast was required and sought from stockpiles to help restore the track back to a safe condition and pig styes were used in numerous locations. A pig stye is a temporary solution for track stabilisation. When a track washout occurs and ballast formation reconstruction cannot be completed immediately, sleepers are stacked underneath the track instead of ballast to provide sufficient support for rail traffic until a permanent solution can be implemented. Pig styes restrict traffic from travelling over affected track at high speeds, and so a 25kmph speed restriction was applied in those locations.

Figure 5 – Coppabella to Macarthur track washout



Coppabella to Broadlea (154km – 158km) figure 6 and 7 suffered from extremely wet conditions which made it difficult for Aurizon vehicles to access the impacted site. The access road was repaired to allow for necessary access to the affect area. New sleepers and ballast were delivered to the site which experienced a high level of washouts in which large rectification works were undertaken. The sleepers were sourced as new material and the ballast was sought from stockpiles already held by Aurizon. Resurfacing was completed and pig styes were also inserted which allowed for the section of track to be returned at 25kmph with a temporary speed restriction.

Figure 6 and 7 – Coppabella to Broadlea – sleeper scouring



12 sleepers had been scoured at Yukan (32.500km – 32.750km) figure 8 and necessary repairs made and ballast installed. 11 sleepers were also washout out in the middle of a culvert on the entry road of Saraji Balloon (67.790km – 68.100km) figure 9 and the outside of the track was washed out on the left leg which affected 28 sleepers. New ballast was sought and sleepers were repacked as necessary.

Figure 8 and 9 – Sleeper scouring at Yukan and Saraji



A pipe extension had been undermined and water had washed under and around a pipe causing the pipe extension to drop and disconnect from the original drain at Daly Bay Junction to Praguellands (11.690km figure 10). It was necessary to dig out the culvert, add new pipes, construct new headwall and wingwalls and back fill the area. At various locations across the Goonyella system, ballast scour had taken place. Ballast scour occurs where ballast is washed away from the formation under the track as a result of flood waters. An embankment was scoured around the drain inlet and a blockage of the access road was experienced as the retaining wall was on a lean. Infrastructure Maintenance constructed rock protection around drain inlets and rectified the access road to pre-flood condition.

Figure 10 – disconnected pipe extension Daly Bay Junction



All works were completed by the Network Infrastructure Maintenance teams quickly and efficiently to allow for the running of train services on the Network. Majority of the affected areas were returned with a 25kmph speed restriction.

A 36hr Goonyella system closure was held in April where major rectification works were undertaken by Aurizon Engineering and Projects team and sub-contractors. Capital costs relating to the work carried out in the 36hr closure has been excluded from this flood claim submission. These cost will be reviewed as part of the ex-post capital claims process.

3. Regulatory Framework

3.1 Purpose

This section sets out the Regulatory framework which governs Aurizon Network's proposals for recovering the incremental costs incurred as a result of the Flood Event. Aurizon Network has prepared this submission in accordance with the provisions of the 2016AU.

3.2 Applicable Regulatory Provisions

Outlined in Schedule F, Clause 5.3 of the 2016AU, Aurizon Network may seek approval from the QCA to vary a Reference Tariff if a Review Event occurs. The definition of Review Event includes:

“The occurrence of a Force Majeure Event - of the type set out in either paragraph (e) (l) or (m) of the definition of that term - affecting Aurizon Network to the extent that Aurizon Network has incurred or will incur additional incremental costs of greater than \$1 million that have not previously resulted in a variation of the relevant Reference Tariff, is a Review Event in respect of which Aurizon Network has given written notice to the QCA of Aurizon Network’s intention to propose a variation to that Reference Tariff under this clause 5;”

A Force Majeure Event means:

“any cause, event or circumstance or combination of causes, events or circumstances which:

- (a) is beyond the reasonable control of the affected party; and*
- (b) by the exercise of due diligence the affected party was not reasonably able to prevent or is not reasonably able to overcome,*

and, provided that the requirements in paragraphs (a) and (b) this definition are satisfied, includes:

...

(e) Act of God;

...

(l) Fire, flood, storm surge, cyclone, tornado, earthquake, washaway, landslide, explosion severe weather conditions or other catastrophe or natural calamity.”

If Aurizon Network submits a variation of a Reference Tariff in accordance with Schedule F, Clause 5.4 in relation to a Review Event it must:

“(a) nominate the Reference Tariff to be varied;

(b) include details of the methodology, data and assumptions used to vary the Reference Tariff;

(c) ...

(d) for a variation in respect of ... a Review Event, evidence that the ... Review Event has occurred or will occur.”

The QCA may approve the proposed variation if it is satisfied that:

“(i) the Review Event has occurred or will occur; and

(ii) the variation of the relevant Reference Tariff:

A. is consistent with the change in the cost resulting from or that will result from the Review Event; and

B. reflects the impact of the relevant Review Event on the financial position of Aurizon Network (including the impact of incremental maintenance and incremental capital costs); and

(iii) for a variation in respect of ... a Review Event...the proposed variation has been calculated as if all other Reference Tariffs were also being recalculated due to ... the Review Event. (see clause 5.3 Schedule F)

An application to vary a Reference Tariff must be submitted to the QCA within 60 days of the Review Event occurring. However the QCA may grant Aurizon an extension of the time for submitting its application. In regard to this claim, the QCA granted Aurizon Network an extension of time to submit the 2015 Flood Review Event by 31 October 2016.

3.3 2016 February Floods are a Review Event

3.3.1 Force Majeure Event

The 2016 Flood Review Event as a result of severe weather in the CQCR was an uncontrollable event, the occurrence of which could not have been prevented by Aurizon Network and hence was a Force Majeure Event. Figure 11, indicates a timeline on the Flood related events, including Force Majeure (FM) declaration timings for the relevant systems

Figure 11 Flood Event timeline



4. Identifying incremental Flood Event costs

4.1 Purpose

This section aims to highlight the process followed by Aurizon Network in identifying incremental costs relating to the Flood Event.

For clarity, costs captured in this submission are not already part of the maintenance cost estimates (maintenance allowance) submitted with Aurizon Network's 2016AU

The cost that forms the flood claim:

- > Can be specifically attributed to Aurizon Network's response to the 2016 CQRC Flooding;
- > Exclude all capital expenditure associated with Aurizon Network's response to the 2016 CQRC Flooding (which will be submitted as part of the separate ex-post capital expenditure claim);
- > Includes all ballast costs relating to the flood rectification work. This is consistent with the 2016AU treatment of ballast as maintenance cost
- > Relate only to incremental costs, such as overtime and not ordinary labour within Aurizon Network; and
- > Excludes any costs which would be claimable under Aurizon's Insurance Program and Self-insurance allowance

4.2 Aurizon Network's approach to identifying incremental Flood Event costs

As part of its approval of the 2016AU, the QCA approved maintenance cost allowances for the regulatory period between FY2014 and FY2017. These costs relate to the maintenance activity required to deliver forecast volumes during the stated regulatory period. For clarity, these costs do not incorporate the recovery of incremental costs associated with the 2016 Flood Review Event.

Flood-related costs were captured at the work order level. Work orders were created in the finance system based on the location of the works undertaken as part of the Flood Event recovery plan. Each flood affected site was treated as a job with a work order attached to it. Each work order for flood work activity was assigned a revision code to ensure all work orders could be separately identified in the finance system.

4.3 Treatment of capital expenditure

The approach adopted in preparing this cost pass-through application is that only incremental maintenance costs associated with Aurizon Network's response to the Flood Event will be claimed. Each rectification job has been analysed by the size of the work involved and the volume of material required to ascertain if it's incremental capital in nature or incremental maintenance.

The jobs identified as capital required upgrades and rebuilding of the assets. As such the capital expenditure relating to the formation reconstruction, between Macarthur to Coppabella and Coppabella to Broadlea which took place in the 36 hour closure in April 2016 is not part of this flood claim submission. These cost will be reviewed as part of the ex-post capital claims process.

4.4 Insurance arrangements

Aurizon Network's risk management is based on a combination of commercial insurance, self insurance and cost pass-through via a Review Event submission to the QCA.

Aurizon Network's approved operating costs allowances in the 2016AU contains;

- An allowance for external insurance premium costs for relevant specifically insured risks under the Industrial and Special Risks insurance policy, as well as general liability insurance, directors and officers insurance, travel etc. Of the below-rail assets, only selected bridges, tunnels and feeder stations are covered under the Industrial and Special Risks policy and there is no cover for rail track infrastructure

- An allowance for self insurance for the costs of insuring key below-rail risks such as derailments, dewirements, weather events and below-deductible liability losses.

Table 1 below sets out the 2016AU, QCA approved risk and insurance allowances for the FY2014 to FY2017 regulatory period.

Table 1 Aurizon Network's Risk and Insurance allowances 2016AU

\$m Nominal	2013/14	2014/15	2015/16	2016/17
Insurance premium costs	3.3	3.7	3.8	3.9
Self- insurance	5.0	5.5	6.0	6.6
Total risk and insurance	8.2	9.2	9.9	10.5

Numbers subject to rounding

4.4.1 External insurance

Aurizon Holdings Limited procures a range of insurance policies negotiated on commercial terms with the global insurance market. Aurizon's Insurance Program includes the procurement of an Industrial Special Risks policy that provides coverage for physical loss or damage to specified assets owned by Aurizon Network. However, the only network assets that are insured for weather events (i.e. flood/washout) are:

- feeder stations and certain bridges are specifically declared under the insurance policy; or
- track or bridges within specified insured premises (station, marshalling yard, depot, workshop);

As no damage was sustained to any of these assets due to the February 2016 CQCR Flooding, no costs were recoverable under the insurance policy. As a result, Aurizon Network has no avenue to recover the incremental maintenance costs associated with the February CQCR 2016 Flooding, other than through a cost pass-through mechanism in the form of a Review Event and the ex-post capital expenditure claim process.

4.4.2 Self Insurance

In determining the proposed amounts for insurance and self insurance for the 2016AU, Aurizon Network engaged Finity Consulting Pty Ltd (Finity) to provide self-insurance estimates for the stand-alone insurance policy premiums.

The Finity analysis concluded that the pass-through option (i.e. including a provision, such as clause 5 of Schedule F in the Undertaking, which permits Aurizon Network to recover through a QCA approved variation to reference tariffs the incremental costs of specified Force Majeure events) is an efficient way of dealing with extreme events which occur infrequently, are extremely difficult to model and are beyond the normal control of the business. Finity approach was approved by the QCA and forms the basis of the 2016AU self insurance allowances.

Consistent with 2010AU, the Finity analysis assumed that that the following events will continue to be subject to pass-through:

- major weather events where below-rail losses to the network exceed \$1 million;
- catastrophic damage to the network from perils such as earthquake, terrorism, war etc where losses exceed \$8 million; and
- liability losses which exceed \$8 million.

By applying Finity’s approach, the 2016AU allowance for Self-Insurance in Real terms is summarised in table 2 below into various risk categories. For clarity Table 1 is the final approved allowances for Self Insurance under 2016AU converted to nominal terms

Table 2 Original UT4 Self –insurance allowance Real \$13/14

Year	Derailments			Weather	Dewirements	Liability	Total
	Track (ex Large)	Yard/siding (ex Large)	Large				
2014	1.16	0.55	1.82	0.82	0.17	0.46	4.97
2015	1.30	0.61	2.04	0.84	0.17	0.47	5.44
2016	1.40	0.66	2.19	0.86	0.19	0.49	5.80
2017	1.49	0.70	2.34	0.89	0.19	0.51	6.14

Including the flood claim of \$2,017,881 in FY16 dollars as part of a Revie Even submission is in line the assumptions underpinning Aurizon Network’s self insurance allowance where, major weather events where below-rail losses to the network exceed \$1m should be captured via cost pass through. The Newlands flood cost were under \$1m and are recovered through the self insurance allowance.

5. Costs related to the 2016 Flood Event

5.1 Purpose

This section details the incremental costs incurred by Aurizon Network in response to the Flood Event.

5.2 Cost breakup

The total incremental maintenance costs which forms part of the cost pass through claim attributable to the Goonyella system is \$2,017,881 expressed in FY2016 dollars.

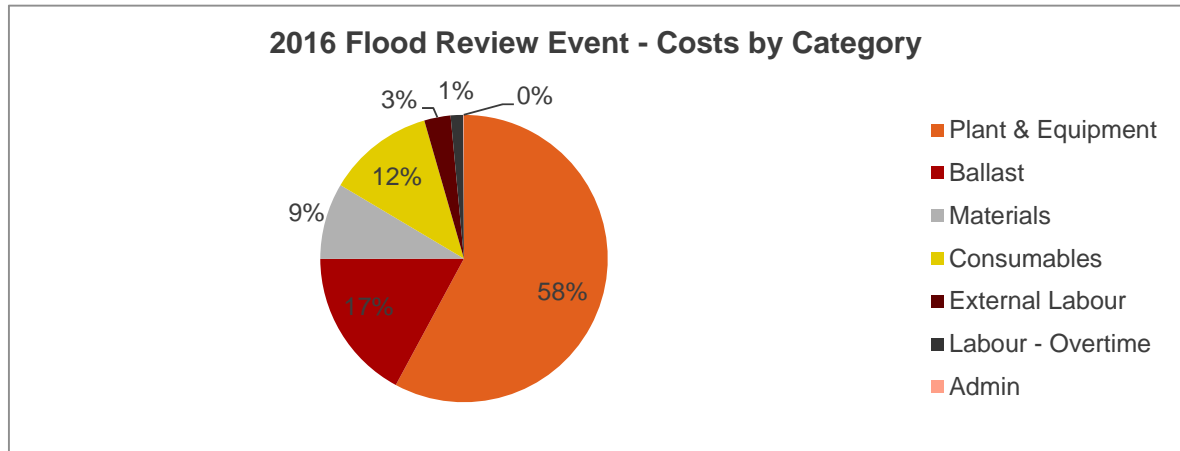
Capital expenditure relating to the formation reconstruction in April 2016, between Macarthur to Coppabella and Coppabella to Broadlea does not form part of this claim.

Table 3 below summarises the total incremental maintenance expenditure by major cost categories that were incurred by Aurizon Network. These incremental costs include actual costs incurred during FY2016. Figure 12 below illustrates the breakdown of incremental costs on a per category basis.

Table 3 Total incremental maintenance costs expressed FY2016 dollars

System	Plant & Equipment	Ballast	Material	Consumables	External Labour	Overtime Internal Labour	Admin	Total
Goonyella (\$)	1,167,584	344,759	172,976	242,522	60,021	28,559	1,460	2,017,881

Figure 12 Incremental maintenance costs by major cost category



The following sub-sections discuss in more detail the nature of the costs incurred in the flood response.

Plant and Equipment

58% of the incremental costs associated with the 2016 Flood Review Event relate to the hiring of Plant and Equipment. Various light and heavy machinery from external sources were required throughout the flood recovery at the job sites. Hiring of plant and equipment was necessary as Aurizon didn't own all the necessary equipment for the flood work.

Excavators, cranes, bob cats, graders, dump trucks, graders, resurfacing machinery were all used for the recovery efforts.

Ballast

Ballast was required to replace the ballast that was washed away or was not suitable to be reused due to ballast fouling primarily through mud.

Materials

Responding to the Flood Event required a range of materials. New sleepers, flood rock and drainage were required to restore washed track at various locations.

External Labour and Overtime Labour

Initial rectification works and inspections were handled by Aurizon Network's Infrastructure Maintenance staff as soon as the flood occurred. These costs comprise of internal and external labour.

The 'Ordinary Labour' costs associated with internal labour has been excluded from this Flood Review Event submission as it has been incorporated into costs submitted as part of the 2016DAU submission. Only incremental internal labour costs, which relate to overtime work have been included. Overtime labour hours have been captured through time sheets. Overtime was required of existing Aurizon Network staff to repair damage to the track and associated infrastructure to make it safe for coal-carrying services to recommence as soon as possible.

Due to the scale of the flood rectification work and the need to swiftly restore the track, Aurizon Network subcontracted some flood rectification work to external contractors.

Consumables

The Consumables category includes additional costs incurred as part of the flood response, including accommodation, airfares and travel expenses for staff. The accommodation and meals costs reflect the transfer of staff from their base locations to the affected job sites.

6. Recovery Plan / Schedule F provisions

6.1 Purpose

This section details the methodology used to vary the relevant Reference Tariffs and the recovery mechanism proposed.

6.2 Aurizon Network's Proposed Recovery Mechanism– recovery over 12 Months from 1 July 2017)

The total incremental maintenance costs relating to the flood is \$2,017,881 expressed in FY2016 dollar terms.

Escalation and tonnage assumptions in the proposed recovery plan are based on Aurizon Network's 2016AU assumptions and will be updated based on the QCA approved tonnages and escalation assumption in place, at the time this flood claim is approved.

The 2016AU rates of escalation used are:

- 7.17% Weighted Average Cost of Capital (WACC); and
- 2.5%, the midpoint of the Reserve Bank of Australia's target rate of Consumer Price Index (CPI)

Volume assumption

- FY2017 tonnage assumptions of the 2016AU applied to arrive at FY2018 Reference Tariff impacts

Escalation method consistent with prior flood claims:

- Where flood costs are incurred and recovered in the same year, costs are escalated at CPI in order to be expressed in nominal terms
- Where recovery of costs is deferred to the next year, costs are escalated at WACC to account for deferred revenue recovery and CPI applied to express costs in nominal terms

Detailed calculations supporting the recovery methodology have been provided to the QCA.

It was necessary for Aurizon Network to escalate the flood costs incurred in February 2016 for four months at WACC, to end of FY2016 to account for deferred revenue recovery for FY2016. After cost escalation is applied, the total costs of for the Goonyella system is \$2,017,881 expressed in FY2016 dollar terms.

Since revenue recovery is likely to be deferred in FY2017, WACC escalation was applied for a full year. CPI was then applied from 1 July 2017 to 30 December 2017 in order to express the costs in 'mid- year terms' FY2018 dollars¹ to arrive at the total recoverable costs of \$2,189,428 in FY2018 dollars.

Aurizon Network considers the most efficient means of recovering the costs is to split the recovery of the 2016 Flood Review Event costs evenly between the AT3 and AT4 Reference Tariffs. This approach is consistent way in which Aurizon Network calculates Reference Tariffs for the CQCR in the 2016AU and prior flood claims.

Aurizon Network's UT5 submission, for the FY2018 to FY2021 regulatory period is due to be submitted to the QCA on 30 November 2016. It is proposed that the variation in Reference Tariffs from the 2016 Review Event be applied to the FY2018 Reference Tariffs that are approved by the QCA and in place for the period 1 July 2017 to 30 June 2018.

This variation and proposed recovery approach is subject to QCA approval. Aurizon Network has outlined its proposed recovery option in Table x below.

Table 4: Recovery over 12 months from 1-July-17 to 30-Jun-18

Cost Recovery	2017/18
Timing of Recovery \$	2,189,428
Tonnes ('000)	115,623
\$ per NT	0.019
Tariff increase	
AT3	0.05
AT4	0.01

¹ Mid-year treatment of revenue – consistent with 2016AU