

Aurizon Network Access Undertaking (2010)

Review Event Submission - Central Queensland Flooding 2015

30 November 2015



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Executive Summary

Overview

- In February 2015, Aurizon Network's Moura System suffered extensive flood damage as a result of Cyclone Marcia.
- Aurizon Network is seeking QCA approval for a variation to Moura System reference tariffs to recover its incremental maintenance costs resulting from this event - in total \$4,237,120 (expressed FY2016 dollars).
- Aurizon Network proposes that the increase Moura System reference tariffs is smoothed over an 18 month period commencing 1 January 2016.

Background

On 20 February 2015, category 5 Cyclone Marcia crossed the Queensland coast North of Rockhampton and proceeded to track South over Aurizon Network's Blackwater and Moura rail systems. While the majority of infrastructure damage was sustained in the Moura system, the impact of Cyclone Marcia resulted in the closure of both systems for all traffic. Aurizon Network declared Force Majeure for both the Blackwater and Moura systems on 19 February 2015, and subsequently mobilised significant resources to inspect and where appropriate restore the damaged sections of the rail corridor.

The Blackwater system was reopened on 22 February with ongoing monitoring of signalling along the North Coast Line (NCL) due to loss of main power supply. As the damage was more significant on the Moura system, it reopened on 18 March 2015 with additional safety measures, such as speed restrictions in place. The final repair works were completed on 16 September 2015. Whilst the systems were closed and during the recovery, Aurizon Network maintained ongoing communication with supply chain regarding the status of the Network.

The Moura mainline between Stirrat and Dumgree and Earlsfield were the most heavily damaged locations by the cyclone, especially the embankment at Bells Creek which was substantially washed-out as a result of the water flow during the cyclone. Aurizon Network incurred substantial costs in reinstating the Moura 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 Moura system through a Reference Tariff variation in accordance with its 2010 Access Undertaking (2010AU) (clause 2.2.7, Schedule F, Part A).

This claim relates solely to the recovery of the incremental maintenance costs incurred as a result of the flood damage in the Moura system. Flood damage in the Blackwater system and NCL which was less intense, 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 work could not be completed nor final costs be established within 60 day time limit for a Review Event (2010AU, Schedule F, Part A, Clause 2.2.1 b). Therefore on 17 April 2015, Aurizon Network applied for an extension of time to submit a cost pass-through application and the QCA granted an extension of time until 30 November 2015.

Quantum of the Flood Claim

This claim relates to only the incremental maintenance expenditure of \$4,237,120 expressed FY2016 dollars. These costs were incurred in both 2014/15 and 2015/16. Table 1 summarises the incremental maintenance expenditure by major cost category.

Table 1 Total incremental maintenance costs expressed FY2016 dollars

System	Ballast	External Labour	Internal Labour - Overtime	Consumables	Plant & Equipment	Inventory	Miscellaneous	Total
Moura	257,897	1,048,150	200,243	385,808	2,297,813	2,824	44,385	4,237,120

Incremental capital expenditure incurred has been excluded from this claim and will be incorporated into the 'ex post' capital claim process, where it will be subject to an independent prudency review by the QCA.

The incremental maintenance spend has been assessed to ensure it does not form part of scope of works included as part of the maintenance cost estimates submitted with Aurizon Network 2014 Draft Amending Access Undertaking (2014DAU). As such the cost incurred only relates to incremental flood repair to restore the Moura system to pre-flood condition.

Aurizon Network confirms that the costs relating to the flood cannot be recovered under Aurizon's Insurance Program.

Only the overtime component of internal labour hours spent on flood work by Aurizon Network has been included in the claim and not the ordinary internal labour hours.

Reference Tariff adjustments

Aurizon Network began consulting with impacted stakeholders on the flood cost recovery options in August 2015 based on estimated flood costs, and provided the final flood costs to impacted stakeholders in November 2015. The recovery options discussed with impacted stakeholders were:

- Recovery Option 1 – Flood costs recovery over 6 months from 1 January 2016 to 30 June 2016
- Recovery Option 2 – Flood cost recovery over 18 Months from 1 January 2016 to 30 June 2017
- Recovery Option 3 – Flood cost recovery over 12 Months from 1 July 2016 to 30 June 2017

(The impact of each recovery option is set out in detail in Section 7 of this submission.)

Feedback received from impacted stakeholders indicated that they preferred a recovery mechanism that minimised the immediate financial impact of the tariff adjustment, however by the date of this submission, no agreement was reached between Aurizon Network and each of the impacted stakeholders as to which recovery option was preferable.

Aurizon Network considers that the option which best balances the legitimate interests of Aurizon Network and impacted stakeholders is Recovery Option 2 (i.e. recovery over 18 months from 1 January 2016 to 30 June 2017). That is because:

- it aligns with Aurizon Network's cash flow spend, as the flood occurred in FY2015 and costs to restore the Moura system to pre-flood condition were incurred over FY2015 and FY2016.
- It spreads the recovery over an 18 month period, in accordance with impacted stakeholder preferences for a smaller immediate financial impact, while not unduly delaying Aurizon Network's cost recovery.
- It avoids extending recovery out past 30 June 2017, which is the current proposed expiry date of Aurizon Network's 2014DAU (UT4), into the period of the next Undertaking (UT5). It would be inappropriate to extend the recovery into the UT5 period where the operating parameters, recovery mechanisms and access tariffs are not known.
- It reduces the risk that the Moura System will be impacted by another Review Event, such as a further flood, during the recovery period.

As a result, Aurizon Network submits Recovery Option 2 for QCA consideration and approval.

Proposed Recovery Option 2 - Flood cost recovery over 18 Months from 1 January 2016 to 30 June 2017

It is proposed that the variation to the relevant Reference Tariffs¹ associated with the Review Event, be retrospectively applied from 1 January 2016 over 18 Months.

Aurizon Network has outlined its proposed recovery option in Table 2 below. The flood costs would be recovered evenly over the 18 month period, which equates to a third of the flood costs being recovered over 6 months from 1 January 2016 to 30 June 2016 (FY2016), while the remaining two thirds of the flood cost recovered over 12 months from 1 July 2016 to 30 June 2017 (FY2017). Details of this proposal is outlined in Section 7 of this submission.

Tariff adjustments are based on estimated volumes pending the finalisation of the 2014DAU

- For FY2016, Moura Non WIRP (Wiggins Island Rail Project) and Moura WIRP tonnes are based on Aurizon Network's 2015 extension DAAU (June 2015)
- For FY2017, the Moura Non WIRP tonnes are outlined in the QCA Draft Decision on Aurizon Network's 2014DAU on Maximum Allowable Revenue (September 2014). The WIRP Moura portion is based on Aurizon Network's estimates following the QCA Draft Decision on WIRP (July 2015)

Input assumptions and tariff adjustments are subject to change as part of the finalisation of the 2014DAU.

Table 2: Recovery over 18 months from 1-Jan-16 to 30-Jun-17

Cost Recovery	2015/16	2016/17
Timing of Recovery \$	1,412,373	3,027,281
Tonnes ('000)	6,760	15,795
\$ per NT	0.21	0.19
Tariff increase		
AT3	0.63	0.57
AT4	0.10	0.10

¹ For FY2016 based on Transitional Tariffs and FY2017 based on QCA Draft Decision Tariffs (September 2014)

Aurizon Network is seeking the revised tariffs to apply from 1 January 2016, however it is possible that the QCA will not make its final decision until after 1 January 2016. In that case, the 2010AU (clause 2.3, Sch F, Part A) provides that if the QCA approves a revision to tariffs that is to apply from a date prior to the date of its decision, Aurizon Network is entitled to recover from each the relevant access holder the difference between the reference tariffs paid and the revised tariffs that should have been payable from the effective date of the QCA's decision (including interest), by way of an Adjustment Charge which Aurizon Network must submit to the QCA for approval.

1. Introduction

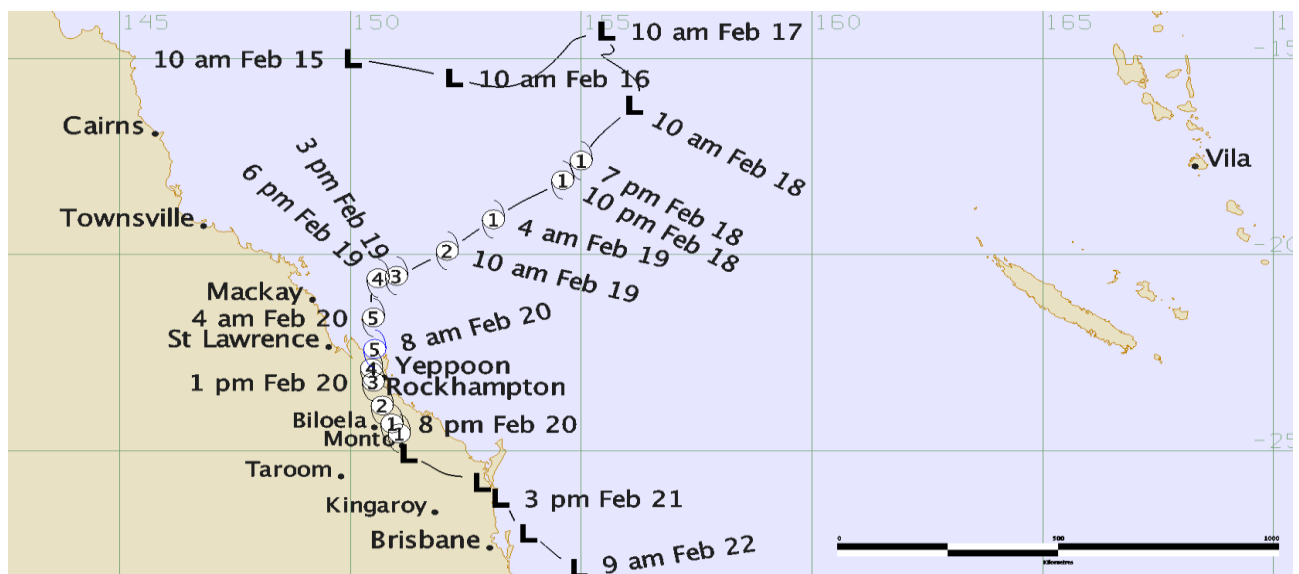
1.1 Purpose

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 Cyclone Marcia in February 2015 (Flood Event). In accordance with of Schedule F, Part A, Clause 2.2.7(a) (ii) of the 2010AU, this section provides evidence that the Review Event has occurred, and highlights the impact on the CQCR.

1.2 Background

A low pressure system formed over the Coral Sea on the 16-17 February 2015. This low deepened quickly and formed into Tropical Cyclone Marcia on the 18 February 2015. Cyclone Marcia made landfall at 8.00am as a category 5 cyclone on 20 February 2015 at Shoalwater Bay, North of Yeppoon. The cyclone then weakened steadily as it moved southward over land during the day. The town of Yeppoon received significant damage, and wind gusts up to 156 km/h were recorded there as the cyclone passed to the west. A storm surge of 2 metres was recorded at Port Alma. The weakening cyclone passed over Rockhampton during the early afternoon, where wind gusts to 113 km/h were recorded and again significant damage occurred².

Cyclone Marcia then turned to the south-southeast and impacted the town of Biloela early that evening, where wind gusts to 85 km/h were recorded. Cyclone Marcia was finally downgraded to a tropical low at 2am on 21 February. Impacts were still felt further south with heavy rain and flooding occurring in the Wide Bay and Burnett and Southeast Coast districts. Eventually, the cyclone weakened and moved off the Sunshine Coast towards the afternoon that day³.



² BOM Severe Weather Events Page, posted on 18 February to 20 February 2015

³ BOM Severe Weather Events Page, posted on 18 February to 20 February 2015

1.3 Impact on the CQCR

Cyclone Marcia had a significant impact on Aurizon Network's rail infrastructure. Services in the Blackwater and Moura coal systems were suspended on the afternoon of 19 February 2015, with Force Majeure declared for the Blackwater and Moura systems. This process was executed in line with Aurizon Network's Incident Management Procedure, which prepares and responds to Incidents in the Network.

The Moura system sustained major infrastructure damage, with extensive erosion at Bell's Creek, near Mt Rainbow (45 kilometres north-east of Biloela). Figure 1 below depicts the damage to the embankment at Bells Creek.

Figure 1 Scour at Bells Creek, Mt Rainbow (100.3km)



Impact on Blackwater and NCL was less intense. Blackwater system was not severely damaged and was able to commence a staged resumption, reopening on 22 February, while the Moura system reopened on 18 March 2015 subject to speed restrictions until full repairs and rail re-stressing was completed. For this reason only expenditure incurred in the Moura system forms part of this Flood Event cost pass-through claim. The extent of the Moura flood damage is further outlined in Section 2.3 of this submission.

Aurizon Network responded quickly and effectively to inspect infrastructure for damage after the cyclone and to recover operations in each impacted rail system. Aurizon Network worked with the supply chain to provide transparency of recovery effort and provide information on the resumption of railings as soon as the network could be made operationally safe. Previous investments in flood protection measures increased resilience of civil works, track, signalling and overhead line equipment and demonstrated their value by enabling the timely restoration of services in the Blackwater system as well as reducing the impact on the Moura system.

The recovery efforts in most of the affected sites in the Moura system were completed by the end of February 2015, however the damage at Bells Creek required an engineering solution to rebuild the washed out embankment. A temporary solution was put in place to support the running of coal services. The track was slewed (i.e. moved) to a temporary location close to the existing cutting, so that repairs could occur to the embankment (see Figure 2 below). In order to provide access to the track section at Bells Creek for the placement of flood rock and repairs, a temporary access way (via 3rd party land) was created to traverse the waterway. After the embankment was built, the track was re-slewled at Bells Creek on 16 September 2015 to its permanent alignment (Figure 3 below). Rail re-stressing at Bells Creek was carried out on 11 November 2015, which was coordinated with a scheduled maintenance closure for Moura. Speed was restored to normal levels on 12 November 2015.

Figure 2 Slewed track to temporary location



Figure 3 Re-slewed track to permanent location



Railings in the Newlands coal system were uninterrupted as both port and rail network continued to operate throughout the Flood Event. Rail services on the Goonyella coal corridor were interrupted due to temporary suspension of in-loading operations by the coal terminals at the port of Hay Point, however Aurizon Network's infrastructure in this system did not experience any damage and railings resumed when port operations were re-opened on Friday 20 February 2015.

1.3.1 Moura East 2013 Flood Rock design improves track resilience

Improving flood resilience of assets across CQC is a key focus for Aurizon Network. The January 2013 flood at Moura East prompted review of flood resistance in the area. When the track was rebuilt in 2013, armouring with flood rock was implemented in some areas. The flood rock provided protection and improved the resilience of the track during the February 2015 flooding. Sections of track at Stirrat-Clarke held up well due to flood rock. Figure 4 below shows debris left on track, however the track was protected.

The flood rock is installed on the rail embankments and prevents or reduces the damage that occurs to formation and ballast due to high water velocities directly impacting the track structure.

Figure 4 Track protected by flood rock



2. Aurizon Network’s response to Tropical Cyclone Marcia

2.1 Purpose

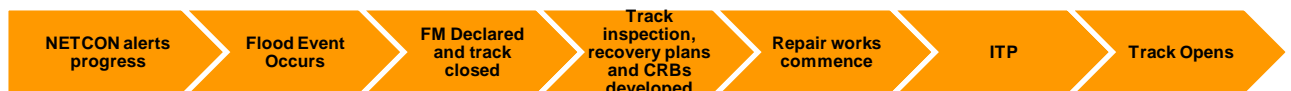
This section sets out how Aurizon Network responded to tropical cyclone Marcia and the subsequent flooding in the CQCR. Aurizon Network’s aim was to ensure interruptions to the supply chain were minimised.

2.2 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 5 below.

Figure 5: Network Operations Incident Management Procedure



Key- NETCON - The Network Readiness Condition CRB - Client Requirement Brief ITP - Inspection Test Plan

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.



The NETCON process was implemented by Aurizon Network following the 2011 floods, as part of the learnings from that event. It allows Aurizon Network to manage and expedite the recovery process by actioning items prior to the weather event occurring rather than following the weather event. The NETCON process was fully activated for the first time as part of Aurizon Network's response to the 2013 Flood Review Event.

When Cyclone Marcia alerts were announced through the Bureau of Meteorology, NETCON level 3 was activated on 18 February 2015 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.

Flood Event resulting in a FM declaration on affected systems

The NETCON 4 alert issued on 19 February 2015, resulted in the cancellation of all non-essential work, with staff placed on standby for emergency response if Aurizon Network's infrastructure is impacted. An Incident Management Team was formed to oversee the preparation for the Flood Event.

NETCON 4 triggered notifications to supply chain participants, such as the mines, port and operators alerting them of possible disruptions to the network. FM was declared on 19 February 2015 for the Blackwater and Moura systems. FM notices were subsequently sent to operators.

NETCON 5 alert was issued on 21 February 2015.

Track inspection, flood recovery plans and CRBs developed

After the cyclone made landfall and subsequently subsided, track inspection was carried out by Track Inspectors or Engineers to assess damage to assets. 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.

Aurizon Network Control Centre worked with rail operators across the Blackwater and Moura systems to support their requests by developing stowage plans to stow their coal wagons and rollingstock. Actions were also taken by Network Maintenance staff to safely secure any at-risk assets, once stowage of train services was completed.

Once inspections had occurred, the Track Inspectors or Engineers developed CRBs to a site specific level.

A CRB is a document created by either a Track Inspector or Engineer that outlines the scope of works required to repair the identified damaged infrastructure. The CRB may contain multiple stages of repair work, and the track may be open between repair stages with speed restrictions in-place. CRBs were created for each individual repair activity in the affected systems.

140 CRBs were created for over 150 work activities as identified in Aurizon Network’s Recovery Plan.

ITP

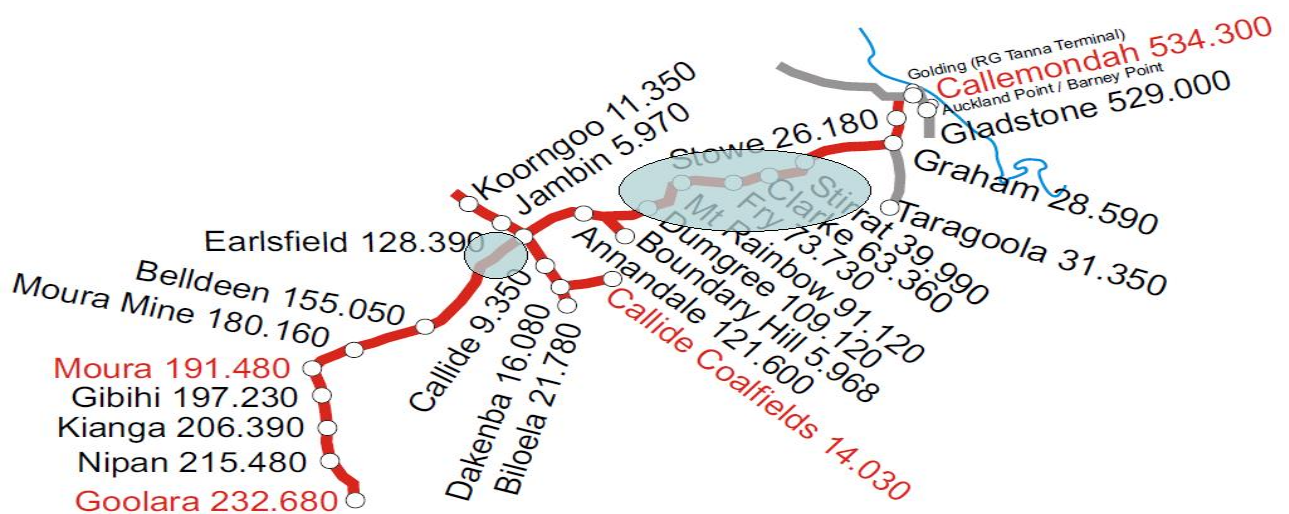
Repairs to the Blackwater system were completed by 22 February and the Moura system opened for railings on 18 March. Aurizon Network continued to complete restoration and repair works in the Moura system for some time post the Flood Event, with the last significant activity to re-slew the track at Bells Creek completed in the planned Moura closure on 16 September. After each set of repair works were completed, an Engineer or Track Inspector signed-off on the completed works to ensure it was completed to Aurizon Network standards.

2.3 Extent of the flood damage to Moura and Blackwater

2.3.1 Moura flood recovery efforts

The Moura mainline between Stirrat and Dumgree and Earlsfield were the most heavily affected locations by the cyclone. Aurizon Network’s Integrated Recovery Centre in Gladstone coordinated Construction and Maintenance teams completing several activities across multiple sites across the Moura system. The Moura system was reopened for railings on 18 March 2015. Initial services were run under a blanket speed restriction of 40kph, with Maintenance staff completing more frequent track inspections to review lifting this speed restriction incrementally back to normal running speeds of 80kph by 12 November 2015, following rail re-stressing at Bells Creek. Figure 6 below, outlines the geographical location of the flood damage.

Figure 6 Geographical location of flood damage



The program of works aligned recovery activities across two critical paths, which were as follows:

- **Critical Path 1 Program - General remediation of all impacted track (excluding the Bells Creek scour)**

General remediation of all impacted track (excluding the Bells Creek scour) which involved over 150 work activities (as identified in Aurizon Network's Recovery Plan) requiring varying levels of rectification works, including ballast replacement, formation repair, rail replacement, resurfacing, wayside signalling equipment reinstatement and fencing repairs. This work was completed by end February 2015.

- **Critical Path 2 program - Remediation of the scour at Bells Creek**

Remediation of the scour⁴ at Bells Creek (100.3km mark) which required an engineering solution due to the severity of the embankment washout. Geotechnical analysis was carried out prior to the engineering solution. The track was temporarily slewed from the scoured embankment onto a new formation and reopened under speed restriction on 18 March. The track was then re-slewed to its permanent alignment on 16 September once the damaged embankment was rebuilt. Aurizon Network worked with the supply chain to identify the best opportunity to minimise impact from this planned work. More information on the track slewing and re-slewing is outlined in detail in the section below.

The program of works related to each Critical Path are described in more detail below.

Critical Path 1 Program- General remediation of all impacted track (excluding the Bells Creek scour)

The Flood Event caused significant formation failure due to major washout and ballast scour across a number of locations, involving over 150 activities. The damage at Stirrat - Clarke and Mt Rainbow-Fry is shown in Figure 7 and 8 below. The repair scope for major wash out involved removing of the track panel (Figure 8 below), repairing the track formation, and then filling of ballast and flood rock to reinstate the track, followed by resurfacing.

Some of the costs relating to the rectification of major washout works at Stirrat- Clarke and Mount Rainbow-Fry have been classified as Capital (due to the size of the work and volume of material required) and therefore not included in this claim. Capital expenditure will form part of Aurizon Network's the 'ex-post' capital expenditure claim process. Only incremental maintenance costs are included in this claim.

⁴ A bank scour is the removal of the material from the surface of the creek bank as a direct result of stream flow. The erosion maybe a result of excessive turbulence or high flow velocity, such as on the outside the channel bend.
<http://www.catchmentsandcreeks.com.au/docs/Watercourse-erosion-1.pdf>

Figure 7 Track and Formation Damage at Fry (89.550km)



Figure 8 Track panel removed at Clarke (61.22km)

Figure 9 Earlsfield–Dakenba (15.07 Km) washout



At various locations of track in Dakenba and Beldeen ballast scour had taken place (Figure 9 above). Ballast scour occurs where ballast is washed away from the formation under the track as a result of flood waters. The track had to be removed, undercut and formation repaired and restored.

Fences that were washed away had to be replaced and damaged fences repaired. Debris and trees had to be removed off track, bridges and fences. Damaged signalling systems also had to be replaced or repaired. For example see Figure 10 where two electrical boxes were washed away and concrete pads damaged.

The Moura flood repairs were completed in areas of cultural heritage significance. Aurizon Network worked with representatives from the Gaangalu Nation, to ensure items of cultural significance were protected.

Figure 10 Points, Signals and Electrical Boxes at Fry (89.740km)



Critical path 2 program - Remediation of the scour at Bells Creek

Significant damage occurred at Bells Creek due to a 300m long and 10m high erosion of the embankment. Figure 11 below depicts the scour and damage to the embankment at Bells Creek. This erosion undermined the track and an engineering inspection and assessment determined the embankment to be unsuitable for supporting the weight of a train.

The engineering solution was to slew the track sideways by up to 5m towards the cutting. Geotechnical analysis was carried out prior to the engineering solution being put in place. A new formation was built to temporarily slew the track. Engineering assessment of the embankment determined that the eroded embankment could support the weight of a loaded train at that distance with an adequate factor of safety.

Figure 11 Scour at Bells Creek, Mt Rainbow (100.3km)



The most significant challenge was providing access for the track section at Bells Creek. A temporary access way (via 3rd party land) was created to traverse the waterway to allow transport and placement of the flood rock. A temporary water course diversion was also required to provide required environmental controls.

A new rock wall and embankment had to then be rebuilt. Once the embankment was rebuilt (Figure 12 and 13), the track was then re-slewed into its original alignment on 16 September and full line speed reinstated on 12 November following rail re-stressing. Rail re-stressing took place on 11 November and was completed in a day. Aurizon Network worked with the supply chain to identify the best opportunity to minimise impact on coal traffic from this planned work.

The expenditure relating to the building of the new rock wall and embankment at Bells Creek have been excluded from this claim and will be included in a future capital claim under Schedule A of the 2010 Access Undertaking. The cost of slewing and re slewing of the track at Bells Creek is included in the claim and not considered capital expenditure as it involved repositioning of the existing track and not the creation of a new asset.

Figure 12 Reinstatement of embankment at Bells Creek



Figure 13 Reconstructed embankment with rock fill and reinstated Bells Creek



3. Regulatory Framework

3.1 Purpose

This section sets out the Regulatory framework which governs Aurizon Network's proposals for recovering the costs incurred as a result of the Flood Event. Aurizon Network has prepared this submission in accordance with the provisions of the 2010AU, as at the time of the Flood Event and of this submission, Aurizon Network was operating under an approved extension to the 2010AU.

Aurizon Network's 2014DAU is currently under consideration by the QCA, however has not been approved as at the date of this submission.

3.2 Applicable Regulatory Provisions

Outlined in Schedule F, Part A, Clause 2.2.1 of the 2010AU, Aurizon Network may seek approval from the QCA to vary a Reference Tariff if a Review Event occurs. The definition of Review Event includes:

“(c) a Force Majeure Event - of the type set out in either paragraph (v) or (xii) 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.”

A Force Majeure Event means:

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

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

and includes:

(v) Act of God;

(xii) Fire, flood, earthquake, washaway, landslide, explosion or other catastrophe, epidemic and quarantine restriction.”

If Aurizon Network submits a variation of a Reference Tariff in accordance with Schedule F, Part A, Clause 2.2.7 (a) in relation to a Review Event it must:

- “(i) nominate the Reference Tariff to be varied;*
- (ii) include evidence the Review Event has occurred or will occur; and*
- (iii) include details of the methodology, data and assumptions used to vary the Reference Tariff.”*

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) has been calculated as if all other Reference Tariffs were also being recalculated due to the occurrence causing or that will cause the Review Event.” (see clause 2.2.7(c) Schedule F, Part A) “

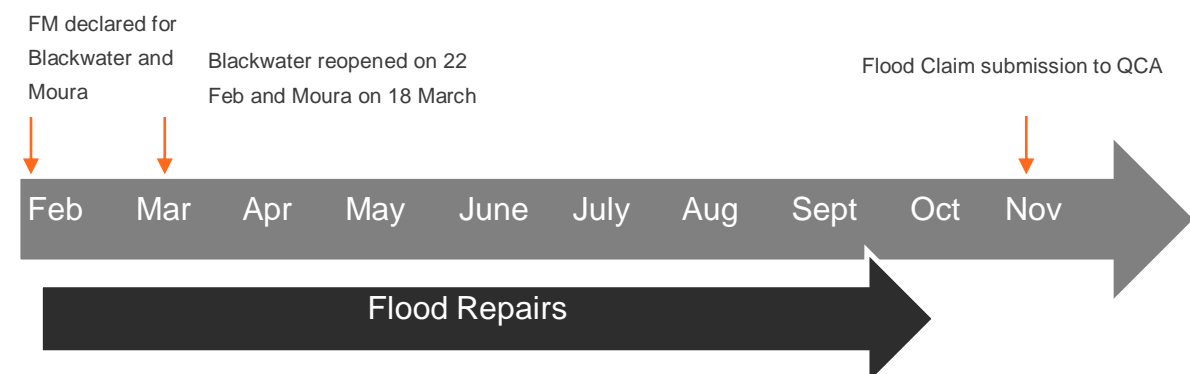
An application to vary a Reference Tariff must be submitted to the QCA within 60 days of the Review Event occurring. However the QCA may grant Aurizon an extension of the time for submitting its application. In regard to this claim, the QCA granted Aurizon Network an extension of time to submit the 2015 Flood Review Event by 30 November 2015. This extension of time took into account the work involved with the re-slewing of the track at Bells Creek which was completed in September 2015.

3.3 2015 February Floods are a Review Event

3.3.1 Force Majeure Event

The 2015 Flood Review Event as a result of Cyclone Marcia was an uncontrollable event, the occurrence of which could not have been prevented by Aurizon Network and hence was a Force Majeure Event. Figure 14, indicates a timeline on the Flood related events, including Force Majeure (FM) declaration timings for the relevant systems

Figure 14 Flood Event timeline



The rectification costs associated with the Flood Event were neither included in the maintenance cost estimates submitted with Aurizon Networks 2014DAU, nor were they included in the Maximum Allowable Revenue submitted as part of the transitional Reference Tariffs for FY2016. Therefore, the costs of the 2015 Flood Review Event are not already provided for in the relevant Reference Tariffs.

Aurizon Network considers the February 2015 Flood Event satisfies the definition of a Force Majeure Event as it was beyond the reasonable control of Aurizon Network. In order to qualify as a Review Event, a Force Majeure Event must meet a financial materiality threshold, which 2010AU defines as "additional incremental costs of greater than \$1 million". These costs must not have been subject to a prior variation of the relevant Reference Tariff.

As outlined in detail in Section 6 of this submission, the incremental maintenance costs associated with Aurizon Network's response to the Flood Event are \$4,237,120 expressed FY2016 dollars which satisfies the \$1 million financial materiality threshold. These costs have not been subject to a prior variation of the relevant Reference Tariff. Therefore, Aurizon Network submits that the flooding associated with Cyclone Marcia represents a Review Event under the 2010AU.

3.3.2 Insurance arrangements

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 2015 floods, 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 2015 floods, other than through a cost pass-through mechanism in the form of a Review Event and the ex-post capital expenditure claim process.

4. Stakeholder engagement

4.1 Purpose

The aim of this section is to outline the communication efforts by Aurizon Network to keep the supply chain well informed during and after the Flood Event.

4.2 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 Cyclone Marcia made landfall. 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.

Aurizon Network also addressed the Capricornia Coal Chain Steering Committee and the Gladstone Coal Export Executive (GCEE) forums in April 2015 to brief participants on the damage from the flood and the recovery approach used. These presentations provided the stakeholders with an understanding of the work required to support train control operations through the Rockhampton based Aurizon Network Control Centre for CQCN, inspection approaches used for effective identification of infrastructure damage across Blackwater and Moura and then the recovery planning and execution activities needed to support resumption of railings in both systems. These forums meet every two months, where Aurizon Network has provided status updates on the recovery efforts to forum participants.

The Flood Recovery plans were drafted by Network Operations in consultation with rail operators and other stakeholders in that supply chain.

Aurizon Network also kept impacted stakeholders updated on the flood costs and the recovery mechanisms proposed. Aurizon Network began consulting with impacted stakeholders on the flood recovery options in August 2015 based on estimated flood costs, with final flood costs disclosed to impacted stakeholders in November 2015. No agreement was however reached with stakeholders and therefore Aurizon Network has proposed a preferred recovery option (detailed in section 7 of this submission). The resulting variation in reference tariffs and proposed recovery approach is subject to QCA approval and stakeholder consultation via the QCA formal response process.

5. Identifying incremental Flood Event costs

5.1 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 2014DAU nor were they included in the Maximum Allowable Revenue submitted as part of the transitional Reference Tariffs for FY2016.

The cost that forms the flood claim,

- > Can be specifically attributed to Aurizon Network's response to the 2015 Flood Review Event in the CQCR used for the purpose of coal-carrying services;
- > Exclude all capital expenditure associated with Aurizon Network's response to the 2015 Flood Review Event (which will be submitted as part of the ex-post capital expenditure claim);
- > 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

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

As part of its 2014DAU submission, Aurizon Network is seeking the QCA's approval of forecast 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 do not incorporate the recovery of incremental costs associated with the 2015 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 remediation process. Each flood affected site was treated as a job with a work order attached to it. Work orders incorporate a description of the nature of the activity undertaken and the location i.e. relevant line section. These costs were booked against line sections of the network, detailed by a unique identifier contained within the applicable Client Requirement Brief. 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.

5.3 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 to existing assets and required rebuilding of the assets. As such the capital expenditure relating to the following items have been excluded from this claim;

- Building of the new rock wall and embankment at Bells Creek
- Major wash out work at Stirrat- Clarke
- Major wash out work at Mount Rainbow- Fry.

The cost of slewing and re slewing of the track at Bells Creek is included in the claim and not considered capital as it involved repositioning of the existing track.

5.4 Maintenance allowance in 2014 DAU vs flood costs

Aurizon Network has reviewed and analysed its maintenance expenditure incurred during the Flood Event to determine whether there are any components that have already included in the scope of the 2014DAU Maintenance Allowance. The outcomes of this review are discussed in the following sub-sections.

Renewals maintenance program

Aurizon Network's flood response had minimal immediate impact on the capital renewal program for 2014DAU as the scope and locations of future renewals did not coincide with the flood damage sites. The capital renewals expenditure incurred will be submitted as part of the 'ex-post' capital expenditure claim process and subject to an independent prudency review of scope, standard and cost.

Civil maintenance programs

The maintenance program service which was most affected by Aurizon Network's flood response was civil maintenance, in particular, track structure management. As part of the flood response, Aurizon Network staff and external contractors worked on numerous activities requiring varying levels of rectification works to restore the track get the network up and running.

The primary intention of Aurizon Network's flood response was to restore track to its pre-flood standard not to a higher standard. As a result, there are no expected, reductions in the scope of the programs over the remainder of 2014DAU period. Therefore, there are no expected cost savings in these programs as a result of the flood response.

5.5 Future asset inspection and maintenance programs

Due to the emergency nature of the Flood Event, the inspection and maintenance performed during the flood response was with the primary purpose being safe restoration of coal-carrying train services. As a consequence, there is little or no expected favourable impact on future programmed or condition based inspection and maintenance programs.

Moreover, as a result of the flooding, Aurizon Network is faced with the uncertainty of the medium to longer term impact on network assets. There is the potential for increased corrective maintenance requirements in the remainder of this and future regulatory periods. Examples of possible longer term maintenance issues on the network include:

1. Extraneous requirements for spot tampering to repair localised formation failure;
2. Higher faults encountered in signalling equipment that was immersed; and
3. Higher general track maintenance in the months following the floods including vegetation management, drainage cleaning and repair and turnout maintenance.

Any or all of these effects are likely to lead to accelerated replacement, repair or operational issues in coming years. However no allowance has been made for any such future costs in this claim as these costs will be absorbed as part of Aurizon Network's business as usual maintenance practices. Any additional track work required will be coordinated with Aurizon Network's planning and scheduling activities.

6. Costs related to the 2015 Flood Event

6.1 Purpose

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

6.2 Cost breakup

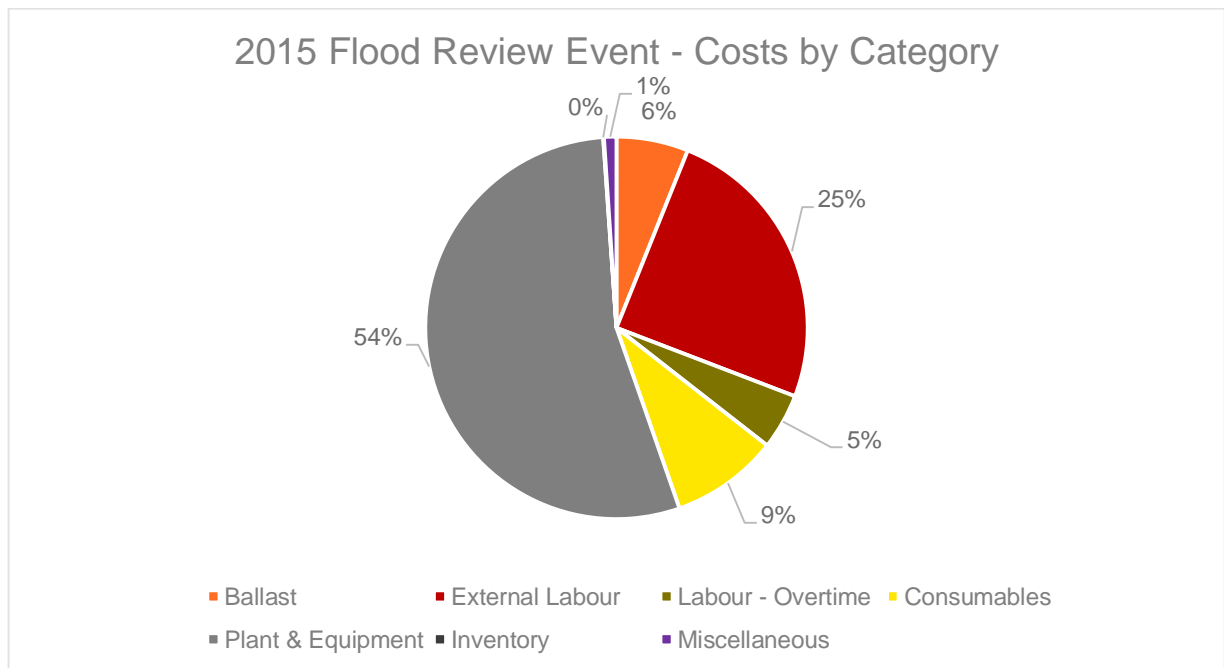
The total Incremental maintenance costs which forms part of the cost pass through claim attributable to the Moura system is \$4,237,120 expressed FY2016 dollars. These costs were incurred in both FY2015 and FY2016.

Table 3 below summarises the total incremental maintenance expenditure by major cost categories that were incurred by Aurizon Network. The maintenance activities undertaken during the flood response were on a corrective (as opposed to preventative) basis. These incremental costs include actual costs incurred in the period between February 2015 and September 2015. Figure 15 below illustrates the breakdown of incremental costs on a per category basis.

Table 3 Total incremental maintenance costs expressed FY2016 dollars

System	Ballast	External Labour	Internal Labour - Overtime	Consumables	Plant & Equipment	Inventory	Miscellaneous	Total
Moura	257,897	1,048,150	200,243	385,808	2,297,813	2,824	44,385	4,237,120

Figure 15 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

54% of the incremental costs associated with the 2015 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 multiple job sites. Excavators, cranes, bob cats, graders, dump trucks, resurfacing machinery and on-track ballast undercutting machines were all used for the recovery efforts. For instance at the Mount Rainbow - Dumgree undercutting with excavator and ballast replacement was necessary to restore the track due to major washout. At Earlsfield – Dakenba special equipment was necessary to remove track in order to repair formation. Also the removal of trees and debris required various plant and equipment at multiple locations.

Hiring of plant and equipment was necessary due to the scale of the flooding and because of the access difficulties caused by closed access roads and rail line sections.

External Labour and Overtime Labour

Due to the evolving nature of the Flood Event, Aurizon Network's response was extremely labour intensive requiring extensive use of contract external labour. Aurizon Network subcontracted the major flood rectification work to the Aurizon Program Delivery team to manage. The Aurizon Program Delivery team employed external contractors for the majority of this work. The costs of both the Aurizon Program Delivery team and external contractors form part of the external labour claim. These are costs would not have been incurred in the absence of the flood.

Minor rectification works and inspections were handled by Aurizon Network's maintenance staff. These costs have been classified as internal 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 2014DAU submission. Only incremental internal labour costs, which relate to overtime work have been included. Overtime labour hours have been captured through time sheets.

Internal labour used during the flood has been costed based on Aurizon's standard labour costing processes and managed in compliance with Aurizon Network's safety and fatigue management policies. 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 re-commence as soon as possible.

Aurizon Network manages a significant proportion of its contractor engagement through formal procurement arrangements. Under these arrangements, Aurizon Network engages in market-based tendering and assessment of contractors to establish long term flexible and lowest supply chain cost contracts.

External labour and overtime from internal labour made up 30% of the claim.

Consumables and Inventory

Responding to the Flood Event required a range of materials which have been categorized as Consumables. Washout of formation and reinstatement of flood rock took place in multiple locations. This required materials such as signalling equipment, flood rock, drainage, and fencing to restore the track and embankments to pre-flood conditions.

The Consumables category also 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 to the affected job sites from various regions they are based at.

Inventory primarily represents Aurizon Network's store issues of minor items of plant, equipment and tools used by field staff in repairing track and associated infrastructure and cleaning up after the flood waters had receded. Purchases of equipment or materials not readily available from Aurizon Network's stores, were purchased directly from suppliers due to the urgency of the requirement

Ballast

New 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.

There are ballast stockpiles at various points in the coal systems and these were drawn upon where possible. However, there were instances where flooding prevented easy access to the existing stockpiles (due to track and road closures), so additional ballast was procured from external suppliers. These additional supplies were made under existing contractual arrangements.

Miscellaneous

This costs category consists of costs related to the compensation paid to land owners for land access for various flood activity.

7. Recovery Plan / Schedule F provisions

7.1 Purpose

This section details the methodology used to vary the relevant Reference Tariffs⁵ and the recovery mechanism proposed.

The Recovery mechanism that Aurizon Network proposes should apply to this claim is Recovery Option 2 (discussed below) which recovers the flood costs over an 18 month period from 1 January 2016 to 30 June 2017. While two other recovery options were discussed with impacted stakeholders, Aurizon Network considers that Recovery Option 2 is the most equitable for the reasons outlined in section 7.2 below.

7.2 Recovery Options

Aurizon Network began consulting with impacted stakeholders on the flood recovery options in August 2015 based on estimated flood costs, with final flood costs disclosed to impacted stakeholders in November 2015. The proposed recovery options discussed with stakeholders were as follows;

Recovery Option 1 – Flood costs recovery over 6 months from 1 January 2016 to 30 June 2016.*

Cost Recovery	2015/16	2016/17
Timing of Recovery \$	4,237,120	-
Tonnes ('000)	6,760	-
\$ per NT	0.63	-
Tariff increase		
AT3	1.89	-
AT4	0.31	-

Recovery Option 2 – Flood cost recovery over 18 Months from 1 January 2016 to 30 June 2017*

Cost Recovery	2015/16	2016/17
Timing of Recovery \$	1,412,373	3,027,281
Tonnes ('000)	6,760	15,795
\$ per NT	0.21	0.19
Tariff increase		
AT3	0.63	0.57
AT4	0.10	0.10

⁵ For FY16 based on Transitional Tariffs and FY17 based on QCA Draft Decision Tariffs (September 2014)

Recovery Option 3 – Flood cost recovery over 12 Months from 1 July 2016 to 30 June 2017*

Cost Recovery	2015/16	2016/17
Timing of Recovery \$	-	4,537,145
Tonnes ('000)	-	15,795
\$ per NT	-	0.29
Tariff increase		
AT3	-	0.85
AT4	-	0.14

* Note: For each recovery option, the same escalation and tonnage assumptions were used (although adjusted to reflect the period over which the costs were recovered). Details in respect of these assumptions are set out in section 7.3 below.

Feedback received from impacted stakeholders indicated that they preferred a recovery mechanism that minimised the immediate financial impact of the tariff adjustment, however no agreement between Aurizon Network and each impacted stakeholder was reached as to which recovery option was preferable.

Aurizon Network considers that the option which best balances the legitimate interests of Aurizon Network and impacted stakeholders is Recovery Option 2 (i.e recovery over 18 months from 1 January 2016 to 30 June 2017). That is because:

- it aligns with Aurizon Network’s cash flow spend, as the flood occurred in FY2015 and costs to restore the Moura system to pre-flood condition were incurred over FY2015 and FY2016;
- it spreads the recovery over an 18 month period, in accordance with impacted stakeholder preferences for a smaller immediate financial impact, while not unduly delaying Aurizon Network’s cost recovery;
- it avoids extending recovery out past 30 June 2017, which is the current proposed expiry date of Aurizon Network’s 2014DAU (UT4), into the period of the next Undertaking (UT5). It would be inappropriate to extend the recovery into the UT5 period where the operating parameters, recovery mechanisms and access tariffs are not known; and
- it reduces the risk that the Moura System will be impacted by another Review Event, such as a further flood, during the recovery period.

Aurizon Network therefore proposes that Option 2 is the recovery mechanism that should be adopted in respect of this Flood Claim.

7.3 Aurizon Network's Proposed Recovery Mechanism (Option 2 – recovery over 18 Months from 1 January 2016)

The total incremental maintenance costs relating to the flood is \$4,237,120 expressed in FY2016 dollar terms. These costs were incurred during FY2015 and FY2016 financial years. The immediate rectification works were completed by end February following the Flood Event while the work at Bells Creek was completed on 16 September 2015.

The rates of escalation used are:

- 7.17% Weighted Average Cost of Capital (WACC) as outlined in the QCA's draft decision on Maximum Allowable Revenue (MAR) September 2014; and
- 2.5%, the midpoint of the Reserve Bank of Australia's target rate of Consumer Price Index (CPI)

Escalation method:

- 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

The WACC escalation impact will be updated to reflect the QCA's final decision on the 2014DAU. 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 FY2015 (February 2015) for a four months at WACC to FY2016 dollars to account for deferred revenue recovery. CPI was then applied from 1 July 2015 in order to express the costs in 'end of year' FY2016 dollars.

CPI was applied to the Bells Creek re-slewing costs incurred in September 2015 for 9 months until June 2016. This approach is consistent with all other inputs used when calculating allowable revenue and tariffs for the FY2016 year.

Base cost as incurred is \$4,048,455. After cost escalation is applied, the total costs of repairing the flood affected Moura system to pre-flood condition is \$4,237,120 expressed in FY2016 dollar terms.

Aurizon Network considers the most efficient means of recovering the costs is to split the recovery of the 2015 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 2010AU (as approved by the QCA) and proposed for the 2014DAU.

Aurizon Network's 2014DAU is currently under consideration by the QCA, however has not been approved as at the date of this submission. It is proposed that variation in Reference Tariffs from the Review Event by applied to the FY2016 Transitional Reference Tariffs and FY2017 QCA Draft Decision Tariffs from 1 January 2016 over 18 Months.

This variation and proposed recovery approach is subject to QCA approval. Aurizon Network has outlined its proposed recovery option in Table 4 below.

Table 4: Recovery over 18 months from 1-Jan-16 to 30-Jun-17

Cost Recovery	2015/16	2016/17
Timing of Recovery \$	1,412,373	3,027,281
Tonnes ('000)	6,760	15,795
\$ per NT	0.21	0.19
Tariff increase		
AT3	0.63	0.57
AT4	0.10	0.10

The flood costs would be recovered evenly over the 18 month period, which equates to a third of the flood costs being recovered over 6 months from 1 January 2016 to 30 June 2016 (FY2016), while the remaining two thirds of the flood cost recovered over 12 months from 1 July 2016 to 30 June 2017 (FY2017).

Tariff adjustments are based on estimated volumes pending the finalisation of the 2014DAU

- For FY2016, Moura Non WIRP (Wiggins Island Rail Project) and Moura WIRP tonnes are based on Aurizon Network's 2015 extension DAAU (June 2015)
- For FY2017, the Moura Non WIRP tonnes are outlined in the QCA Draft Decision on Aurizon Network's 2014DAU on MAR (September 2014). The WIRP Moura portion is based on Aurizon Network's estimates following the QCA Draft Decision on WIRP (July 2015)

Input assumptions and tariff adjustments are subject to change as part of the finalisation of the 2014DAU.

As Aurizon Network is seeking the revised tariffs to apply from 1 January 2016, it is possible that the QCA will not make its final decision until after 1 January 2016. In that case, the 2010AU (clause 2.3, Sch F, Part A) provides that if the QCA approves a revision to tariffs that is to apply from a date prior to the date of its decision, Aurizon Network is entitled to recover from each the relevant access holder the difference between the reference tariffs paid and the revised tariffs that should have been payable from the effective date of the QCA's decision (including interest), by way of an Adjustment Charge which Aurizon Network must submit to the QCA for approval.