Review of the 2016 Flood Event Claim

Assessment of Work Scope and Costs Incurred

Opex / Maintenance Cost Claim Components

Aurizon Network Goonyella System

B&H Strategic Services Pty Ltd

April 2017

Executive Summary

This report is a review of the claim made by Aurizon Network (AN) for the costs involved in the reinstatement of the rail infrastructure following a flood event in January 2016.

The claim being assessed here forms only part of the work undertaken by AN in the full restoration of the infrastructure. This claim is the portion to re-establish coal services in the immediate aftermath of the event and the claim only deals with Opex or maintenance level expenditure. Another claim, a capital Capex component, will be submitted by AN at a later time. For the purposes of this report the work achieved and claimed will be labelled “early works” phase.

These early works consisted of establishing access to flood affected areas, removal of debris including earthworks on and alongside the track, temporarily rebuilding washed out formation, clearing drains, applying ballast and realigning the track, vertically and horizontally.

This work was achieved using contracted plant and equipment for the earthworks and AN labour for the realignment and placement of temporary works on the track and the formation with the assistance of contract equipment.

A small amount of AN mechanical tamping was performed during this phase and has been claimed as part of the “early works”. However, in general, the use of AN plant and equipment has not been claimed and could be expected in the Capex claim at a later time.

This review has assessed AN’s claim against criteria set out in AN’s 2016 Undertaking approved by the QCA.

B&H is satisfied, that on the balance of probability it is likely that AN could not have controlled the event and that reasonable due diligence could not have prevented or overcome the event. In that respect it is a force majeure event. However, for the future there is reason to believe that AN could investigate similar circumstances and locations since it appears from their claim history and the weather records that similar events will be more common. Future events may not be force majeure.

B&H is satisfied that the event triggered the work activities included in the claim, and the costs associated with those works. The works would not have occurred if the event had not occurred. The works were necessary for trains to operate safely.

B&H is also satisfied that AN have been carrying out drainage maintenance prior to the event in accordance with the UT4 maintenance allowance. AN provided extensive evidence that such work had been occurring. Drainage maintenance could have been a case of “double dipping” as the activity relates to the possibility of AN claiming costs under the flood review event which would have been incurred in the normal course of business through the maintenance allowance in UT4, but we are satisfied this is not the case. “Double dipping” in this case is applicable only to a consideration of drainage infrastructure since it was the flood event and the impact on and caused by drainage inadequacies that lead to damage to drainage and other infrastructure, including track, culverts and earthworks.

We are satisfied that the plant & equipment and contracted labour costs (58% plant and 3% labour of the total claim) are incremental as they were incurred by contractors[1] and we have seen the transaction level data to our satisfaction. We suggest that AN negotiate in advance of these events to get the best deal from contractors who are already on site.

We are also satisfied that the ballast cost (17% of total) is incremental as it is material sourced externally and transported by Aurizon above rail, an external party.

However the AN internal costs in labour and equipment are not so clear as to their incremental nature. The claim has only considered overtime by AN's workforce (1.5% of the total claim), the normal time[2] incurred being ignored by AN because of previous advice from QCA[3]. At the same time, AN originally indicated[4] that the use of that "normal time" labour has not and will not create abnormal circumstances[5] on the remainder of the track in terms of impact on infrastructure condition. The "activity usage machine hours" in AN costs amount to 4.2% of the total claim and the rates used appear to reflect fully rolled up rates.

B&H is not satisfied that incremental costing has been used to calculate AN's internal costs in this claim. The labour rates are not incremental as they are the same rates used under normal circumstances[6] which include fixed components such as workers compensation, annual leave and payroll tax which are calculated on base salary/wages. The plant rates used also do not appear to reflect an incremental rate which should be available given a large proportion of costs of plant is time related.

The combined AN internal labour and plant costs claimed amount to approximately 5.6% of the total claim. We have referenced information that suggests the incremental rate may be 10% lower and would amount to 0.6% of the total claim.

B&H observe that there is a lack of transparency which has affected B&H's ability to see whether the costs were justified under the 2016 Undertaking criteria. As the claim is only for Opex, the full extent of the work scope is unclear. The distinction between Capex and Opex by AN[7] and indicated by QCA in earlier decisions, has been based on current conventions applicable to "business as usual" circumstances. B&H doesn't believe these normal conventions are applicable in all circumstances in a force majeure context and that redefinition of Capex and Opex is warranted in the context of a flood event.

B&H is also concerned that external plant hire is not subject to the same scrutiny for efficiency as would otherwise apply for large work. Existing plant from contractors in the area was utilised and this is an effective way to get the work done. It has not been possible to verify the legitimacy of the contractors' claims and the efficiency of costs. The costs are based on service agreements which were already in place. Further, the contractors run the risk of not receiving future work and it is in their interests to provide a good service at these times of need.

B&H have concluded that AN's claim is justifiable against the criteria in UT4 to the extent that possible internal AN cost inaccuracies or miscalculation for incremental purposes is

[1] Not including Aurizon, which transport ballast
[2] At the normal rate, single time as such
[3] According to email from AN, Tues 14/03, shown in the Appendix C to this report
[4] Subsequently, it was clarified by AN that catch up was necessary at considerable expense in an email at Appendix C, Mon 20/03
[5] Appendix B
[6] Comparison with maintenance work performed for drainage maintenance prior to the event
[7] In their response to information requests

financially immaterial. This is because by far the majority (around 94%[8]) of costs were costs resulting from unplanned work performed by external contractors.

This conclusion however only highlights the situation that there is opaqueness and this situation needs to be clarified before the next event.

B&H make recommendations for future claim transparency and fairness to all parties that:

- The classification[9] of Opex and Capex costs is reviewed to take into account the circumstances of a force majeure event, particularly as they relate to the appropriateness of a Capex category and minimisation thereof.
- The inclusion of normal labour into the claim should be considered, or include the catch-up labour used to undertake normal maintenance, and, at the same time, AN modify the assumptions underpinning the calculation of unit labour rates to include only the incremental component.
- The way in which internal plant unit rates are applied should be considered since some components of plant rates are not incremental and should not be rolled up into flood remediation work.
- AN should consider negotiating with external plant suppliers, including Aurizon above rail, for this type of work in these circumstances to ensure AN is getting the best incremental rates from the suppliers that are doing work in the area and for which some fixed cost components are already being covered through the UT4 maintenance allowance or Capex work.

In addition, B&H suggest that AN adopt a template for explaining the claim to provide the underlying logic and transparency. A possible template is as follows:

A logical explanation of the course of the work to restore services including:

- The resources used:
  - Internal labour, normal hours and overtime hours, whether claimed or not
  - External labour
  - Equipment used, internal and external
  - Administrative resources used for the work
- The work sequence
  - A pictorial of the damage and the clean up operation as it occurs, showing these resources being used
- Any major work envisaged at a later date and why and where, showing:
  - Major earthworks associated with drainage, embankment rebuilding
  - Cutting cleaning and widening if contemplated
  - Track rebuilding and/or replacement
  - Signalling or electric traction
- Discussion of how the unit cost rates differ from the normal cost rates for:
  - Labour
  - Equipment
- Discussion of why the existing infrastructure was not able to manage the weather event, including:
  - Known design parameters of the existing infrastructure
  - Weather event statistics and why it was unpredictable

[8] Based on AN's internal labour and plant costs being 5.6% of the total claim

[9] Criterion for capital expenditure or operating expenditure are not explicit in UT4 but rather have developed as practices or understandings

Contents

1 Background

Aurizon Network (AN) experienced a Review Event[10] in January 2016 when flooding occurred after severe weather.

AN is making a claim under the provisions of the 2016 Undertaking and have provided a submission outlining the circumstances, statement of compliance with the provisions and monetary quantification, as well as the application mechanism for recovery.

The claim consists of Opex or maintenance level work performed in the immediate aftermath of the event to restore train services. The claim made by AN to date does not include a more substantial claim for capital works which they will claim is associated, if not fully, on account of the Review Event.

The claim consists of contractors' costs as well AN's own costs through its own labour as well as other external costs including from Aurizon above rail and from suppliers of consumables and materials.

[10] Defined in Schedule F, clause 5.1(a)(ii) of the 2016 Access Undertaking

2 Methodology

In order to address the 2016 Undertaking criteria for evaluation B&H sought information from AN through a request for information and which AN replied with extensive information. The questions, the relevant criteria and the explanation for the question is provided in a table in Appendix A.

In the RFI questions were asked to provide B&H with information so that an assessment could be made against the criteria.

The information within the response provided the data needed for the assessment.

AN's response to the question relating to previous work on drainage maintenance was detailed in that it provided raw data captured at the lowest level of data entry and was clear evidence that AN had been carrying out drainage maintenance work.

The response however did not adequately address the issue of incremental costs incurred in the restoration work because it was not clear that incremental unit rates had been applied to the costs incurred rather than the full unit rate for various costs. This is because some unit rates are comprised of a fixed component that would have been built into the UT4 maintenance allowance. For example, the provision in the labour unit rate for leave is a fixed amount and does not vary linearly when overtime is worked at a higher unit wages rate. The leave accumulation is the same whether or not overtime is worked and this was important since AN's claim was stated as only claiming for overtime wages hours.

Consequently a supplementary question was asked of AN to provide cost data for the restoration in the same format as the drainage maintenance data provide for costs incurred prior to the flood event. This would show the unit labour rate and any other unit rates that were relevant. The format of this data shows the work activity, the persons involved, the unit rate and the number of hours worked.

The raw data also shows the contractors' costs and the material cost for the work.

Further email RFI's were also made and these are provided in Appendix C.

AN has responded to these RFI quickly and with a large amount of data.

3 Assessment

3.1 The Review Event

The provisions of the Undertaking, in part, are that the Review Event including a force majeure event:

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

and that "*The force majeure review event definition includes acts of God, fires, floods, earthquakes, washaways, landslides, explosions or other catastrophes, epidemics and quarantine restrictions"*

AN have provided evidence by way of Weather Bureau extracts that a severe weather event occurred and photographs show the extent of the damage. There is no doubt that a Review Event as envisaged by the Undertaking did occur and that a significant amount of damage occurred. This event would be "beyond the reasonable control" of AN.

In the RFI, AN was asked about the design of the railway and the extent to which this event could have been foreseen, either at the time of design or subsequently.

AN's response was that

"*AN does not have the legacy hydrological design capacity information of the original design of the rail line. The impacted locations were built in the 1970s and constructed according to the original catchments and topography at the time. However, over the years the surrounding catchment and topography changes (impacted by mining and other developments) to either side of the rail corridor which have resulted in changes to the pathway and speed at which water moves across the changed topography".*

Despite the fact that it is unlikely AN has no records of the design parameters[11], it is true that the science of design was not to the same level of sophistication then as to today's modelling and that hydrological records were in any case scarce.

However it is clear that there is an awareness in AN that circumstances have changed and it may be prudent of AN in the future for a review of the circumstances in particularly prone areas so that cost effective preventative measures could be taken.

3.2 The Work Method and Claim Structure

In order to understand the claim it is necessary to understand how the work was undertaken, what labour, materials and other costs were incurred and whether it is a logical construction of costs. In this section we review the claim against the logic of the work performed.

3.2.1 Labour

The labour element of the claim comprised only $28,559 of $2,017,881, or approximately 1.5% of the total claim.

External labour was also used comprising $60,021.

[11] Railways generally do not throw these things away, particularly a traditional railway like QR/AN"

The combined number of labour hours is approximately 1,200 hours assuming a unit rate of $80 per hour. This represents the use of approximately 6 persons over a period of 1 month (at 50 hours per week).

We also note that $344,759 worth of ballast, $172,976 of material and $242,522 consumables was used and the question arises as to how this amount of material was consumed if only the claimed labour [redacted] was used in its deployment. AN's claim only accounts for overtime labour, so normal hours amounting to approximately [redacted] was involved. Indeed, [redacted] was posted as "unclaimable" labour in the accounts[13].

3.2.2 Ballast

Also, to distribute and use the ballast, about 60,000 cubic metres, assuming a rate of $50 per cubic metre, extensive plant would have been required to "regulate" the ballast and to tamp it under the sleepers. "Regulation" of ballast is the process of pushing the ballast into the space between the sleepers and at the ends of the sleepers so that the tamping machine can pack the ballast under the sleepers.

There is no doubt that ballast would have been used on the track to restore it to workable condition and no doubt ballast was used as "fill" in locations where formation had been washed away since the surrounding earth fill would not have been in a condition to use for formation repair. The Capex claim is likely to include a large proportion of earthworks.

The explanation for ballast in the AN submission was "*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*". This clearly points to the use of ballast as railway ballast and therefore would have needed mechanical tamping and regulating. If the ballast was not used as "railway ballast" in the usual sense of the word then a better description may have been "crushed rock fill" or suchlike.

The full extent of tamping and regulating is unknown except that a small amount conducted by AN was included in the "early works" ($83,653) and claimed in Opex[14], and contractors were used[15] for the Capex component. The classification of tamping and regulating in Opex and Capex, using Opex ballast, does not assist with transparency, since after the early works it is likely that similar, although more intense tamping and regulating was carried out in the Capex phase.

3.2.3 Material

The AN submission states "*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*". In fact in information provided by AN it is revealed that only timber sleepers were used to "pig-sty" the track in locations where a washout occurred. A "pig-sty" is a supporting construction produced by beams in a cross-hatch pattern and the interior in then filled with material. Some of this material was probably ballast. The explanation of the word "new sleepers", implying concrete sleepers since this is the type used on CQCN, could have been more transparent since the sleepers were not used as sleepers at all.

[12] Overtime hours in the GA Flood Recovery _Tariff model_31.10.2016
[13] GA Flood Recovery _Tariff model_31.10.2016
[14] email from AN, Tue 14/03, shown in the Appendix C to this report
[15] Preliminary information from AN (GA flood Recovery Cost line Report - Capital cost.xlsx)

3.2.4 Consumables

AN's submission explains "*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*". These extra costs are understandable and would have been mainly applied to persons who worked ordinary hours and also worked overtime hours. Many ordinary hours must have worked since only the equivalent of 6 persons worked overtime.

Therefore, the claim with respect to consumables relates to providing extra services to persons working ordinary hours, but not to cost those ordinary hours. It means that all of those persons are not doing their work on other parts of the CQCN during their time repairing the Flood damage and this must have an adverse effect on the condition of the infrastructure elsewhere which was verified[16] by AN in their concern for the need for catch up work.

3.3 Labour Costs

AN's submission explains "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."

The labour element of the claim comprised only $28,559 of $2,017,881, or approximately 1.5% of the total claim.

Any possible miscalculation or application of a unit rate is immaterial and within bounds of the accuracy of data collection.

External labour was also used comprising $60,021. Any comment made about this cost is applicable in the next section.

In relation to the assumption by AN that normal hours are not claimed, it had not been made clear through the RFI responses why using normal hours for work that is unpredictable, being force majeure, why there is no impact on the condition of other parts of the network, but was subsequently clarified that indeed, considerable catch up work would be required.

For example, when considering incremental labour rates, if the fixed costs of labour such as paid leave, public holidays, leave loading, workers compensation, superannuation and payroll tax is taken into account[17], the reduction in unit labour rates is approximately 10%[18]. AN's fixed costs would not be much different to the ABS data. This rate could be applied to normal hours worked on the restoration or on the catch-up component, both to be justified.

AN's current method uses full rates but "discounts" itself by claiming only overtime and nothing for the disruption and catch-up to its usual activities. A full understanding of the composition and derivation of the labour costs in the maintenance allowance of the 2016

[16] Email from AN, Mon 20/03, 10:19 AM
[17] These provisions are based on base salary
[18] ABS 1350.0 Table 1 "Composition of Labour Costs"

Undertaking would provide some background to the methodology used by AN in these event claims.

3.4 Contractors' Costs

AN have made extensive use of contractors, mainly for the provision of plant but also for some labour supplementation.

In the response to the RFI, AN indicated that this plant was mainly plant being used in the area or presumably easily sourced at a local level.

This strategy is expeditious.

AN also indicate that the rates paid to the contractors were essentially the same as for other work performed for AN, or at the very least, no new rates were renegotiated.

In the same way that labour costs contain fixed components, so too does plant costs. Amortisation/depreciation is time based and so remains fixed with usage[19]. Some servicing schedules are also time based. Many costs are not time based.

In as much as the work order and general ledger data supplied by AN does not contain unit rates, but only total costs, it has not been possible to verify the legitimacy of the contractors' claims and the efficiency of costs. These costs are based on service agreements which were already in place. Further, the contractors run the risk of not receiving future work and it is in their interests to provide a good service at these times of need.

Nevertheless, it is not unreasonable to suggest that AN might foresee this need, as it does with consultants who are required to quote on work beyond the normal scope, and pre-negotiate "extras" in terms of costs and/or conditions of work.

B&H is satisfied with the magnitude of the costs involved from the contractors for the "early works" and AN has provided a level of detail at transaction level to show those invoices/charges from the contractors to our satisfaction.

An evaluation of the Capex costs will follow this review.

[19] Within certain bounds where the mechanical deterioration cannot be repaired by servicing

4 Conclusions

B&H has assessed the claim submitted by AN in relation the Weather Event in January 2016 affecting the Goonyella System of the Central Queensland Coal Network.

B&H has assessed the claim against acceptability criteria embodied in the 2016 Undertaking. Our conclusions are:

- A Force Majeur event occurred which could not have been foreseen or prevented by AN.
- It is possible future events may be predictable to some degree because the events appear to be occurring, in recent years, at a frequency that may not reflect the infrastructure design. AN should evaluate its infrastructure for similar events.
- AN have submitted a claim which largely satisfies the criteria associated with incremental[20] costs and that they were reasonable incurred. B&H have concerns that the AN labour and plant costs are not incremental but the estimated portion that is not incremental represent only 0.5% of the total claim and therefore immaterial as by far the majority were external costs not subject to the structure of costs incurred internally. However, those external costs similarly may not be incremental and it would be prudent for AN to negotiate with existing suppliers about providing services at incremental rates.
- B&H is concerned that without the Capex claim being submitted at the same time as the Opex claim, the full extent of the work is opaque and the claim's adherence to the criteria is not clear. Therefore our recommendation is that the two claims should be submitted together.
- The opaque nature of the claim was exacerbated by the absence of clear work flow and scope, along with resources used. A template for submission of future claims has been proposed.

[20] We have understood the criteria "*is consistent with the change in the cost resulting from or that will result from the Review Event"* as meaning incremental costs

Appendix A – RFI questions, criteria relevance and reason

	Questions to AN for the 2016 Flood Event on Goonyella System	Criteria	Comment
1	<u>Maintenance Works of UT4</u> What "Drainage Maintenance"[21] cost was incurred in the 12 months prior to the Flood Event, on the affected sections involving: 1.1. Culvert clearing/cleaning 1.2. Formation (minor) repair 1.3. Access road grading/maintenance 1.4. Off-formation drain clearing or re-establishment 1.5. Other drainage maintenance	"*is consistent with the change in the cost resulting from or that will result from the Review Event"*	This question asks whether maintenance works should have been done, and would have been paid for under a UT allowance therefore showing whether the claimed costs represent the true change in cost
2	<u>Works Costing</u> a) How were the Unit Rates generated for each work activity of the flood remediation, in each of labour, materials and AN owned plant & equipment? b) Is the Unit Rate the same as the Unit Rate applicable to the maintenance allowance in UT4 for labour, materials and AN owned plant & equipment? c) In the Unit Rates used, what was the incremental[22] part of that Unit Rate? d) If the full Unit Rate was applied, has there been any discounting or compensation for the fixed component of the Unit Rate? For example, some equipment will be serviced on a time basis	"is consistent with the change in the cost resulting from or that will result from the Review Event"	This question seeks to obtain detail of the way AN's works costing works and in particular whether the unit rates used in works costing for flood remediation is a marginal cost or an all-up cost, which would incorporate fixed costs that were already paid in the Maintenance Allowance.

[21] As used by Aurizon in their UT4 maintenance submission
[22] Variable or marginal

	regardless of actual use and this servicing would have already been incorporated in the UT4 allowance.		
3	<u>AN Plant & Equipment Costing</u> a) How was the AN owned Plant & Equipment, for the flood event, costed? b) What Unit Rate was applied to tamping activity c) Is the Unit Rate for tamping different from that in the UT4 Maintenance Allowance? d) What Unit Rate was applied to the transport costs for ballast and stone, when AN owned wagons/equipment were used and is the Unit Rate different from that in the UT4 Maintenance Allowance? e) What costs are associated with a "hire" or usage from Aurizon's above-rail business and have they been incorporated into the claim? For example, locomotive hire for ballast trains.	"*is consistent with the change in the cost resulting from or that will result from the Review Event"*	This question asks whether the fixed costs associated with AN's own plant (tampers/ballast regulators), and which would normally be incorporated into a maintenance allowance in UT, were also passed on in the restoration works and reflect the true change or marginal cost or an all-up cost. If the plant was fully hired then there would be no Aurizon fixed costs. But if the plant was hired out for this job at the rate that it is usually costed from internal sources, then the fixed costs would have already been paid for in the UT maintenance allowance.
4	<u>Use of Materials</u> a) Why was it necessary to use new sleepers and rail? b) Is the unit cost for materials the same as the unit cost used in UT4, being a "stores" rate? c) Were the sleepers a more modern version than those being replaced, with improved load carrying or improved fastening systems? d) How many concrete sleepers were used? e) How many metres of new rail were used?	"*is consistent with the change in the cost resulting from or that will result from the Review Event"*	It is hard to believe that new concrete sleepers were needed at all since all sleepers on the railway are already concrete. Some may have been damaged but it appeared from the photographs that the rail and sleepers remained intact. Was this an opportunity for Aurizon to replace some older type of concrete sleeper (some older types are lower axle load rated and outdated fastenings (FIST)) and should an "upgrade" to higher capacity sleepers be capitalised?

	f) What signalling equipment was replaced and how many of each type with unit costs greater than $1000? g) What traction equipment was replaced and how many of each type with unit costs greater than $1000? h) Were there any other significant (>$1000 unit cost) materials used?		
5	<u>Capital repairs</u> a) In general terms, why are some of the repairs, capital in nature?	"*is consistent with the change in the cost resulting from or that will result from the Review Event"*	What is the logic and why wouldn't expenditure be on a like-for-like basis? Is AN taking advantage of a situation to upgrade without the checks and balances of capital expenditure?
6	<u>Maintenance Implications</u> a) What savings or added costs in maintenance are envisaged resulting from the work completed to address the flood event? b) What savings have been recognised from the replacement of deteriorated materials such as ballast, sleepers or rail, or improved drainage and formation construction? c) What extra costs have been recognised due to the inadequacy of repair measures to fully address the damage?	*"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);*	Do the costs claimed include provision for increased maintenance costs in the future OR for decreased maintenance costs in the future, that "reflect the impact on the financial position of AN?
7	<u>Flood Preparedness</u> a) How does the Flood Event circumstances of heavy rainfall compare with the design capacity of the drainage system? b) Is "300mm in some areas" greater than the design	*(a) is beyond the reasonable control of the affected party; and* (b) *by the exercise of due diligence, the affected party was not*	This questions looks to discover as to whether it was reasonably preventable, by due diligence of design or of maintenance.

	capacity (generally 1 in 50 year event)? c) Does this mean that the Event was greater than a 1 in 50 year event?	*reasonably able to prevent or is not reasonably able to overcome*	
8	<u>Efficiency of Contracting</u> a) How are contractors engaged for this type of work? b) Are rates and conditions pre-arranged in anticipation of these types of events, in accordance with efficient cost tendering practices?	"*is consistent with the change in the cost resulting from or that will result from the Review Event"*	This question seeks knowledge about the Contractors' cost efficiency
9	<u>Labour Cost Efficiency</u> a) How many normal labour hours were used in the remediation works? b) Will AN have to use overtime hours to catch up on maintenance? c) Will the condition of the network be adversely affected because of the use of normal hours for the remediation works?	"*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);*	This question asks whether the position taken by AN, in which use is made of a high degree of normal hours labour, is the most efficient, because "catch-up" maintenance will need to use overtime, or the condition of the infrastructure will deteriorate if the catch-up is not made. The over-use of overtime will effect AN's financial position. Is AN feather-bedding its maintenance costs at the expense of the flood costs OR is the practice having a detrimental effect on incremental maintenance and incremental capital costs and therefore affecting AN's financial position?

Appendix B – RFI(1) Questions and AN Response

Queensland Competition Authority

13 February 2017

Dear, please find an information request to Aurizon Network (AN) regarding the engineering aspects of their 2016 Flood Event submission. [AN Response in blue text]

Questions to AN for the 2016 Flood Event on Goonyella System

1. Maintenance Works of UT4

What "Drainage Maintenance"[23] cost was incurred in the 12 months prior to the Flood Event, on the affected sections involving:

1.1. Culvert clearing/cleaning

1.2. Formation (minor) repair

1.3. Access road grading/maintenance

1.4. Off-formation drain clearing or re-establishment

1.5. Other drainage maintenance

AN has provided the Goonyella system drainage maintenance costs extracted from SAP system for the period between Feb 2015 to Jan 2016 (see attached excel file). The product codes C06, C67 and B53 cover activities broader than the drainage maintenance activities described above. More detailed definition of each of the product is contained in the first tab of the attached excel file.

2. Works Costing

a) How were the Unit Rates generated for each work activity of the flood remediation, in each of labour, materials and AN owned plant & equipment?

The labour rate is built using labour, indirect costs and billable hours. Plant rates are calculated similarly to recoup costs of owning and maintaining the plant. Materials are costed at their purchase value.

b) Is the Unit Rate the same as the Unit Rate applicable to the maintenance allowance in UT4 for labour, materials and AN owned plant & equipment?

No, the rates are reviewed regularly to ensure cost recovery resulting in a $Nil EBIT. However the methodology is the same as UT4.

c) In the Unit Rates used, what was the incremental[24] part of that Unit Rate?

d) If the full Unit Rate was applied, has there been any discounting or compensation for the fixed component of the Unit Rate? For example, some equipment will be serviced on a time basis regardless of actual use and this servicing would have already been incorporated in the UT4 allowance.

This part answers b), c) and d).

[23] As used by Aurizon in their UT4 maintenance submission
[24] Variable or marginal

The unit rates used in the flood are fully 'incremental' and therefore, Aurizon Network has not applied any discounting for the fixed component of the unit rate. This is clear for material as the material would not have been used if not for the flood. For labour and plant & equipment, it is useful to understand the UT4 maintenance allowance build-up to appreciate the 'incremental' nature of these costs.

For UT4 allowance, Aurizon Network has calculated the unit rates based on total cost and the forecast usage capacity. Aurizon Network then multiplies this unit rate with the projected usage for maintenance activity to arrive at the maintenance allowance. In doing so, not 100% of the total costs of labour or plant & equipment are included in the maintenance allowance.

As a simple example, assume a bobcat costs $10,000 a year and has usable capacity of 100 hours. Then the unit rate will be $100/hr. These 100 hours will be spit across a wide range of activities such as normal maintenance activities, capital projects and others like flood recovery. If the UT4 maintenance activities require only 60 hours of the bobcat, then only $6,000 (being $100x60) is built into the UT4 maintenance allowance. Therefore, even the bobcat is used for flood recovery, it should be billed at $100/hr, as a variable/incremental cost as Aurizon Network has not recovered the fixed cost component through normal maintenance activities.

The cost build-up for labour is the same as plant & equipment. However, Aurizon Network has only sought to recover the overtime component in this claim. In theory, Aurizon Network should be compensated for the total labour costs as a result of the flood work as explained above.

3. AN Plant & Equipment Costing

a) How was AN owned Plant & Equipment, for the flood event, costed?

Plant rates are built to recover the costs of owning and maintaining the plant. The rate used in the flood event is the same rate used for all other activities. However, this does not mean Aurizon Network will recover more than 100% of the total cost of Plant & Equipment. This is because Aurizon Network has built up the UT4 allowance based on the rate and the projected usage which is less than 100% of the Plant & Equipment capacity. A detailed discussion has been provided in the answer to 2 b), c) and d).

b) What Unit Rate was applied to tamping activity?

Aurizon Network did some hand tamping activities in this flood recovery but we would only book labour for this. The hand tampers are not costed out to activities.

c) Is the Unit Rate for tamping different from that in the UT4 Maintenance Allowance?

N/A, as per answer to b).

d) What Unit Rate was applied to the transport costs for ballast and stone, when AN owned wagons/equipment were used and is the Unit Rate different from that in the UT4 Maintenance Allowance?

N/A, in this flood claim, all ballast are sourced from a third party supplier. The transportation costs are included in the cost of ballast.

e) What costs are associated with a "hire" or usage from Aurizon's above-rail business and have they been incorporated into the claim? For example, locomotive hire for ballast trains.

N/A, as per answer to d).

4. Use of Materials

a) Why was it necessary to use new sleepers and rail?

There is no new rail used and claimed under this flood claim. There are 270 standard timber sleepers used for pig styes and flood rehabilitation works. The materials were required under an emergency repair order due to the high urgency of flooding and were necessary to help resume the revenue train services in a timely manner.

b) Is the unit cost for materials the same as the unit cost used in UT4, being a "stores" rate?

Most of our inventory is valued on a moving average basis. The actual rate may be different but the methodology would be the same

c) Were the sleepers a more modern version than those being replaced, with improved load carrying or improved fastening systems?

As per answer to a), the use of that 270 sleepers are for temporary fix to enable the resumption of train traffic and does not improve any of the system properties.

d) How many concrete sleepers were used?

As per a), there are 270 standard timber sleepers used.

e) How many metres of new rail were used?

No cost of new rail is included in this claim.

f) What signalling equipment was replaced and how many of each type with unit costs greater than $1000?

No signalling equipment was replaced.

g) What traction equipment was replaced and how many of each type with unit costs greater than $1000?

No traction equipment was replaced.

h) Were there any other significant (>$1000 unit cost) materials used?

No.

5. Capital repairs

a) In general terms, why are some of the repairs, capital in nature?

To be clear, no capital works are included in this flood claim.

The main test for the distinction between repair and capital is whether the useful life of the asset has been extended. Repairs fundamentally do not extend the asset life whereas renewals do.

So if an incident causes an infrastructure to be damaged and we can restore it to the pre-incident condition without extending its useful life level then the related costs are repairs in nature. However, if in restoring the asset we increase the asset's useful life materially then we treat it as having been renewed (i.e. capital).

Internal process followed:

- Aurizon Network follows Aurizon Group Accounting Policies with respect to all accounting issues including the classification of costs as operating or capital expenditure
- The Group Accounting Policy framework, includes a Property, Plant & Equipment policy that specifically sets out the policies relating to the classification of costs as capital expenditure (as opposed to operating expenditure)
- Under the Aurizon Delegation framework appropriate Finance Partner endorsement must be obtained for all investments
- All Aurizon capital investments are also subject to the Investment Framework including the Stage Gate process and Aurizon Network has additional requirements relating to capital including review by the Manager Capital & Investment Appraisal's team and the Network Investment Committee (if > $10m)
- The Manager Capital & Investment Appraisal manages and reports on Aurizon Network's capital expenditure program and as part of this responsibility ensures capital funding requests meet Aurizon's capitalisation policy
- Finally the Group Financial Reporting & Governance Manager and team can also review material or risky capital submissions for appropriateness of accounting treatment either of their own volition or if sought for advice by Aurizon Network.

6. Maintenance Implications

a) What savings or added costs in maintenance are envisaged resulting from the work completed to address the flood event?

This flood claim represents the initial flood rectification work required to get trains up and running. Therefore, no savings are envisaged resulting from these particular works. We see these costs as not relevant to ongoing maintenance activities.

b) What savings have been recognised from the replacement of deteriorated materials such as ballast, sleepers or rail, or improved drainage and formation construction?

This flood claim represents the initial flood rectification work required to get trains up and running. It does not include the replacement of deteriorated materials.

During the 36 hour closure, however, capital works were carried out involving work activities such as formation reconstruction, ballast replacement, track slewing and rail stressing. These cost will be reviewed as part of the ex-post capital claim process.

c) What extra costs have been recognised due to the inadequacy of repair measures to fully address the damage?

As described in the submission, the following activities were carried out as soon as the flood occurred to provide sufficient support for rail traffic until a permanent solution can be implemented.

- debris removal, temporary pig stye, repairing of access roads, digging out the culvert, add new pipes, construct new headwall and wingwalls

The temporary measures are required in response to any flood prior to the permanent solution is put in place.

For example, temporary measures such as pig stys (to temporarily support track) is not an inadequate repair measure, but is only temporary to ensure we can run trains, albeit at a reduced speed, until such time as we can obtain the right materials and plant and time to execute a long-term fix.

7. Flood Preparedness

a) How does the Flood Event circumstances of heavy rainfall compare with the design capacity of the drainage system?

Unfortunately, due to the age of the infrastructure (and any associated documentation for its construction), AN does not have the legacy hydrological design capacity information of the original design of the rail line. The impacted locations were built in the 1970s and constructed according to the original catchments and topography at the time. However, over the years the surrounding catchment and topography changes (impacted by mining and other developments) to either side of the rail corridor which have resulted in changes to the pathway and speed at which water moves across the changed topography.

In order to best respond to this query, the drainage system will be required to be re-modelled as catchment topography changes and modelling methodologies improve. This exercise is both extensive and costly in nature and requires iteration as catchment topography changes.

However, if we do construct new track, we build the base of ballast to a Q50 level and Q100 to the top. Changes to this would be assessed from a commercial perspective (i.e. too expensive or time consuming to provide this level of immunity etc.) as well as an understanding of the inherent risks we would otherwise be exposed to should we derogate against this.

b) Is “300mm in some areas” greater than the design capacity (generally 1 in 50 year event)?

Explanation as above

c) Does this mean that the Event was greater than a 1 in 50 year event?

Explanation as above

8. Efficiency of Contracting

a) How are contractors engaged for this type of work?

Due to the time critical nature of the response required following the flood, Aurizon Network engaged the same contracting companies who were already working around the flood impacted areas at the time on other Aurizon Network jobs. The contracting companies already had a service agreement with Aurizon Network and had proven capabilities.

c) Are rates and conditions pre-arranged in anticipation of these types of events, in accordance with efficient cost tendering practices?

As mentioned in (a), the contractors were carrying out planned activities for Aurizon under pre-arranged rates, in accordance with efficient cost tendering practices. Those same rates would apply for the flood works.

9. Labour Cost Efficiency

a) How many normal labour hours were used in the remediation works?

According to the Internal Labour tab of the submitted flood claim spreadsheet, the total number of normal labour hours are around [redacted].

d) Will AN have to use overtime hours to catch up on maintenance?

Aurizon Network prioritises works according to the urgencies. AN may use overtime hours to catch up on maintenance when necessary. However, for clarity, such catch up overtime is not included within this claim.

e) Will the condition of the network be adversely affected because of the use of normal hours for the remediation works?

No.

Martin Baggott

Director

B&H Strategic Services Pty Ltd

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Appendix C - Further RFIs and/or Responses

Tamping and sequence of activities

3/6 March 2017

Question:

The clarification I'm seeking relates to the progress of work. I was of the view that initial rectification, in the first week say, would all be claimed under this claim, maintenance as such. But you indicated that no mechanical tamping is part of this claim. It is difficult for me to understand how track could be rectified and suitable for coal trains without the use of mechanical tamping.

If the track damage was severe, as it looked in the photographs, it would be unlikely that it could be rectified without mechanical tamping. This is because the rectification would have involved dropping large amounts of ballast that had been washed away and then mechanical tamping.

Could you please clarify that this sequence and categorisation of work is as I have suggested for tamping and many other components such as sleepers, rail, culvert repairs or anything else. If it is not as I envisage then could an explanation be provided as to how the track was made ready for coal trains without the use of these resources please.

Response:

We have done mechanical spot tamping in a few locations. The RFI response only addressed hand tamping and not mechanical. Your sequence of activities are correct and mechanical tamping or resurfacing cost (as we call it) have been included in the claim.

Ballast

11/14 March 2017

Question:

Exactly the same quantities of ballast and cost (to 3 digits) are listed in both the opex and Capex spreadsheets. In the cost claim (opex) tab "Total Costs_Goonyella" is listed 19,118 for ballast, but the ballast tab shows 341,3463 and the Table 3 Submission (pdf) shows 344,759. In fact the sum of 19,118 shown for ballast in fact is "load & cart ballast, flood rock and road base". Then there's "additional ballast" in "Total Costs_Goonyella" which makes up the difference.

But did you wish this "additional ballast" to be in OPEX or CAPEX since the same numbers appear in the CAPEX spreadsheet in rows 18 to 35 as appear in the "ballast" tab for OPEX.

Response:

As per previous flood claims and consistent with UT4, all ballast costs are considered as Opex cost and not Capex. Though the ballast costs were part of the Capex work, we have included in the Opex claim for that reason. Thats why the same quantity was included in the Opex.

Upon finalisation of project Capex costs the ballast is excluded to ensure no double up. The full list of costs were provided to give a picture of the work carried out.

Question:

So the ballast will be in opex. So too then should be the work done to "install" the ballast.

Response:

Consistent with prior flood claims, we have not included the ballast installation cost as part of the Opex claim. Only the material and delivery cost.

Wagon charges

11/14 March 2017

Question:

In terms of the wagon charges. How are they calculated? Is this an incremental cost or is it the full cost that would be charged for normal "hire" for normal work? Does it include the locomotive and operator charges? Maybe it is just an Aurizon above Rail charge?

Response:

The wagon charges cover full cost such as wagon hire and train crew charges. It is an Above Rail charge.

Question:

In the case of wagon costs supplied by the external entity, Aurizon, are these incremental costs or full rate costs that they pass on? Do they also budget in the same way where they assume there will be some flood related work throughout the year?

Response:

The wagon charges are a full rate passed on to Aurizon Network and is a fixed rate set for the year. We don't have more visibility on the setting of the Aurizon Operations wagon charges.

Labour

11/14 March 2017

Question:

Just on the people side. People like [redacted] I see costs [redacted]/hr and is with Resurfacing Operations North. Is that an incremental cost? That looks like a fully rolled up rate that includes all types of fixed costs (leave allowance, workers comp, superannuation etc are normally calculated on the basis of the base salary) that would have been paid for in the UT4 allowance. But I see you're not claiming their hours because they are not OVT. Is that because they are covered in UT4?

Are people like [redacted] in OVT because they are admin staff that came in after hours to organise paperwork and contractors? Is their wage rate an incremental rate at [redacted] per hour, perhaps this is double time rate? Again, is this the marginal rate or a fully rolled up (normal) rate that would be used for normal time if it was [redacted]?

So the overall question is whether you actually use a marginal/incremental rate for labour and other internal things (e.g. wagons?, resurfacing) or do you just use the rate that would be applied in the normal course of business? I note the actual rate used is not shown, only the hard coded quantity and hard coded value. So that calculation is done elsewhere.

So looking at [redacted] in the Pre-flood works she is shown as costing [redacted]/hr. I see she's costing the same rate for the flood works.

The OVT labour is only a small component of the claim so it's not a big impact if an incremental rate is not used for the flood work. But it's just an indicator to me that you don't appear to be applying incremental rates for internal costs? Is that right?

Response:

- The labour rates used in the flood claim are the fully rolled up (normal) rates. These are not incremental rates or double time rates
- When an employee works over time (OVT), those hours are recorded against a different work center in SAP and those hours are costed at the employees normal rate
- However as mentioned in our response to RFI #2 on 28/02/17, for UT4 allowance, Aurizon Network has calculated the unit rates based on total cost and the forecast usage capacity. Aurizon Network then multiplies this unit rate with the projected usage for maintenance activity to arrive at the maintenance allowance. The usage capacity is split over a wide range of activities such as normal maintenance activities, capital projects and others like flood recovery. Therefore, not 100% of the total costs of labour is included in the maintenance allowance.
- As a result, these labour unit cost is not incremental rates in strict sense, but is 'incremental' in nature as Aurizon Network has not had the opportunity to recover the full fixed costs
- Accordingly, Aurizon Network should charge even the normal labour hours as 'incremental' costs for this flood claim. However Aurizon Network have not sought to include the non OVT hours in this claim as it has been rejected in prior attempts, which Aurizon Network believes was incorrect. As a result of the previous rejection on the non OVT hours, only the OVT hours at normal rates are included in the claim.

15/20 March 2017

Question:

The labour rate is calculated taking into account the proportion of work performed by these people throughout the year which would take into account their work on Capex, private sidings, UT4 etc.

So this means that the UT4 allowance/budget would not cover 100% of the labour costs. Thus in a year where there are no floods or Capex the labour costs would be under-recovered.

Can you provide the proportions of work that were assumed to occur for the UT4 period and therefore what proportions were allocated in the budget assumptions for floods please?

Response:

No allocations are made to floods as the resources required depends on whether there is flood event and the extent of flood damage which cannot be reasonably predicted.

However, this does not mean Aurizon Network will over recover its total costs if unit rates used are the full rates. This is because Aurizon Network will have to pay additional costs for staff working overtime or external contractor services, as well as additional machinery hire in the catch up work on normal maintenance activities or Capex works post the flood. Such catch up costs have however not been quantified.

Earthworks

15/20 March 2017

Question:

In the case of earthworks I note that the Opex claim is approximately the same in the Capex. Does this mean that the (repair) restoration work was covered mutually exclusively by the Opex claim while improvement works are covered mutually exclusively by the Capex. Is that the correct interpretation of the two sets of earthworks costs?

Response:

Yes that's correct.