finity

13 December 2011

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Dear Kieran

Update of Earthquake Claim Liabilities for AMI Insurance as at 31 October 2011

Introduction and Purpose

The purpose of this letter is to provide an update on the estimated earthquake claim liabilities for AMI Insurance based on data to 31 October 2011. We have revised our estimates following investigations that have occurred since the previous report was issued, dated 17 August 2011.

Summary of Results at 31 October 2011

Table 1 summarises our estimates of AMI's EQ liabilities at 31 October 2011, with each of the three major events shown separately. Note that the figures in the body of the table are net of payments made to 31 October 2011. The line below the table indicates our estimate of the total amount which will ultimately be paid once all claims are settled (including payments already made). Our recommended provisions incorporate a risk margin which we believe to be consistent with the requirement to establish provisions which incorporate at least a 75% probability of sufficiency.

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Table 1 – Recommended EQ Provisions at 31 October 2011

Provisions for Outstanding Claims as at 31 October 2011	Cat 93 4-Sep-10 $m	Cat 106 22-Feb-11 $m	Cat 112 13-Jun-11 $m	Total Major $m	Total Minor $m	Total Overall $m
Gross Incurred Cost in 31 Oct $	630.0	988.9	83.6	1,702.5	18.8	1,721.2
less paid to 31 October 2011	-84.6	-32.0	-0.8	-117.4	-0.8	-118.3
Gross Outstanding Claims						
In 31 October Values	545.4	956.9	82.8	1,585.0	17.9	1,603.0
Allowance for Future Inflation	45.6	85.8	10.6	141.9	1.7	143.7
Inflated Values	591.0	1,042.6	93.4	1,727.0	19.7	1,746.6
Discount to Present Value	-30.0	-60.4	-5.6	-95.9	-1.0	-96.9
OSC Discounted to 31 Oct 2011	**561.0**	**982.3**	**87.8**	**1,631.1**	**18.7**	**1,649.7**
Claims Handling	[redacted]					
Gross Central Estimate						
Catastrophe R/I Recoveries	-494.9	-553.4	-75.3	-1,123.6	-8.0	-1,131.5
Aggregate R/I Recoveries	0.0	-1.6	-4.1	-5.7	0.0	-5.7
Net Central Estimate	**76.8**	**446.0**	**10.1**	**532.8**	**11.0**	**543.9**
Risk Margin	[redacted]					
Recommended provision						
Inflated Gross Central Estimate (Incl paid to date + CHE)	**688.4**	**1,095.1**	**94.2**	**1,877.6**	**20.9**	**1,898.6**

withheld under section 9(2)(b)(ii)

Our estimate of the gross incurred cost (in current values) is largely unchanged from our previous valuation ($1,721 million versus $1,723 million previously), although it should be noted that this has arisen from a series of adjustments which have fortuitously balanced each other out. In the four months to 31 October 2011, a total of $70 million has been paid out by AMI, of which the vast majority is offset by reinsurance recoveries.

Our overall recommended provision for AMI's EQ liabilities, net of reinsurance recoveries, at 31 October 2011 is $768 million. The key points to note include:

- Across all events, our gross central estimate of AMI's EQ liabilities at 31 October 2011 (before adding claims handling expense) is $1,650 million, with $1,631 million relating to the three major events and $19 million relating to the seven minor events
- The allowance for claims handling expense is based on a loading of 1.9% of the discounted gross outstanding claims; this is the same loading as was applied at our previous valuation
- We note that the allocation between the September and February events has seen a shift towards a greater proportion being allocated to September. This is in response to the DRAs carried out so far. The current value estimate of the June event remains about the same, although the net provision increases due to the projected cost of the Boxing Day event (and hence the deductible for the June event) is slightly higher than previously estimated
- The assumed pattern of future payments has been slowed to reflect the latest views on how rebuild/repair and cash settlement activities are likely to progress, particularly for Over Cap claims (which represent the majority of the estimated claim liabilities). Our revised payment pattern has resulted in the discounted mean term of the Over Cap liabilities increasing from 1.5 years to 1.9 years. This has increased the estimated value of the earthquake liabilities due to the gap between

inflation and discount rates. Our payment pattern is shown in more detail in Appendix B

- The discount rate used has been updated to reflect the expected yield curve at the end of October 2011 based on the New Zealand Treasury's published rates at the end of September 2011. The yield curve has reduced by between 0.1% at short durations to around 0.6% out at FY 2017. This has acted to increase the liability at 31 October 2011 by about $10 million
- As the line of figures underneath the table indicates:
  - Cat 93 (the 4 September 2010 event) is currently estimated to ultimately cost $688 million (in inflated $); as such this event is now well in excess of the limit of the amount of reinsurance cover purchased for this event ($600 million)
  - Cat 106 (the 22 February 2011 event) has an estimated ultimate cost of $1,095 million (in inflated $), which is also well in excess of the available reinsurance cover of $600 million
  - Cat 112 (the 13 June 2011 event) has an estimated inflated cost of the order of $94 million, which falls well below the maximum reinsurance cover for this event of $1,000 million
- The present value of recoveries expected to be made from AMI's reinsurance covers total $1,137 million, with $1,132 million coming from the main catastrophe programme and $6 million coming from the three aggregate covers which were in place for various periods of time during which these events occurred
- After deduction of reinsurance recoveries, across all events, our net central estimate of AMI's EQ liabilities is $544 million, with the majority of this ($446 million) being due to the loss from the 22 February 2011 event going through the top of the reinsurance cover available for this event

withheld under section 9(2)(b)(ii)

- Our recommended provisions incorporate risk margins of $[redacted] million; this is calculated as [redacted]% of our gross central estimate of liabilities, but noting that to the extent that the assessed loss for an event is expected to fall below the available reinsurance cover, the risk margin is offset by a potential reinsurance recoverable; this applies to the June 2011 event where there is offset of $[redacted] million (i.e. [redacted]% of the gross central estimate of $89.5 million).

Key Assumptions

At a property level, for the three major events combined, our assumptions have changed as follows:

- The ultimate number of Over Cap properties recorded by AMI is projected to be 6,913 which compares to 7,009 adopted previously; of these, we have projected 6,464 will result in an Over Cap liability for AMI (compared to 6,475 at our previous valuation)

- The average size (net of EQC contributions) per Over Cap property has been increased from $194,000 to $197,000 (2% increase), reflecting the net impact of a number of adjustments:
  - *Over Cap average size:* We have adjusted the average sizes to reflect the emerging DRA experience. The mix of future claims is more biased towards areas that have higher rebuild costs (for example, the Hills) and hence the future average size is higher than the size to date. The average size increases to about $197,000
  - *TC3 (Blue Zone) Costs:* We have included an additional allowance for foundation costs in TC3 (Blue Zone) in response to likely changes in building standards. We have allowed an extra $20,000 per property for Rebuilds and $10,000 per property for Repairs. This increases the average size further to $203,000 per property
  - *Impact of Settlement Options:* Our estimate of the amount by which AMI's liability will be reduced as a result of customers choosing options other than the Rebuild option has increased from $53 million to $88 million, noting that to date our views have been drawn from a relatively small volume of completed settlements. This reduces the average size per property to $197,000.

A number of other assumption changes were made that affected the estimate of gross incurred cost. These include:

- *Out of Scope claim size*: A reduction in the estimated size following a review of both the contract values agreed with Arrow against case estimates, and further analysis of the latest trends in case estimates for the September and February events
- *Temporary Accommodation:* For this cover, we have expanded our analysis to estimate the ultimate number of claims by applying, by land zone, the claim frequencies for AMI's House experience to the number of inforce Contents policies. This approach, together with an assumption that most Red Zone policies will incur a Temporary Accommodation claim, has resulted in an increase in the estimate.

Table 2 sets out for each of the three major events the translation of the above property-level Over Cap assumptions to claim volumes and average sizes for each event, together with a summary of the assumptions we have made about the claim numbers and average claim sizes for the other cover types. Note that the costs are expressed in 30 June 2011 values. The sizes and costs shown for Over Cap claims are net of estimated EQC contributions. For comparison, the equivalent assumptions at our previous valuation are also shown.

Table 2 – Major Events: Summary of Claims Assumptions

Cover Type	Current: Ultimate No of Claims	Current: Average Size $000	Current: Total Cost $m	Previous: Ultimate No of Claims	Previous: Average Size $000	Previous: Total Cost $m
04 September 2010						
Over Cap	3,660	141	514	2,800	160	448
Out of Scope	8,700	9	78	8,800	9	82
	12,360	48	593	11,600	46	530
Lost Rent	210	11	2	240	9	2
Temp Accom	2,250	14	30	2,400	15	35
Contents	340	8	3	600	8	5
Vehicles	1,130	1	1	1,130	1	1
Other	75	10	1	70	10	1
	4,005	9	37	4,440	10	44
Total	**16,365**	**38**	**630**	**16,040**	**36**	**574**
22 February 2011						
Over Cap	5,300	144	761	5,400	150	810
Out of Scope	10,550	12	127	9,800	15	147
	15,850	56	887	15,200	63	957
Lost Rent	760	12	9	585	12	7
Temp Accom	4,800	15	70	3,300	17	55
Contents	1,045	17	18	1,600	15	24
Vehicles	2,055	2	5	2,100	3	5
Other	35	10	0	35	10	0
	8,695	12	102	7,620	12	92
Total	**24,545**	**40**	**989**	**22,820**	**46**	**1,049**
13 June 2011						
Over Cap	1,100	60	66	300	190	57
Out of Scope	1,300	9	12	1,360	15	20
	2,400	32	78	1,660	47	77
Lost Rent	75	14	1	50	16	1
Temp Accom	240	16	4	200	17	3
Contents	65	9	1	60	12	1
Vehicles	175	2	0	180	2	0
Other	15	4	0	12	6	0
	570	10	6	502	10	5
Total	**2,970**	**28**	**84**	**2,162**	**38**	**83**

Reconciliation with Previous Estimate

The estimate as at 31 October 2011 can be compared with our previous estimate as at 30 June 2011.

Table 3 – Movement of Gross Incurred Estimate

	$m	Change ($m)
Previous Gross Incurred Cost estimate	**1,722.7**	
Change in Over Cap estimates reflecting experience	1,756.1	33.4
Change in TC3 foundation costs	1,791.1	35.0
Increase in savings assumed	1,757.9	(33.2)
Reduction in OOS claim sizes	1,715.8	(42.1)
Increase in temporary accommodation estimate	1,726.6	10.8
Change in other classes and minor events	1,721.2	(5.4)
Latest Gross Incurred Cost estimate	**1,721.2**	**(1.5)**

Table 4 – Reconciliation of Provision

	Gross $m	Change ($m)	Net $m	Change ($m)
30 June Provision based on 31 August data	**1,707.7**		**741.1**	
Actual payments	(69.9)		0.0	
Interest	16.8		7.4	
Provision at 31 Oct using June assumptions	**1,654.5**	**(53.2)**	**748.6**	**7.4**
Provision at 31 Oct incorporating delay in actual payments	1,657.8	3.3	749.0	0.4
Change in claims cost assumptions	1,657.5	(0.4)	741.4	(7.6)
Slow down in payment pattern	1,672.1	14.7	758.6	17.2
Change in discount rate	1,681.1	8.9	768.1	9.5
Recommended Provision	**1,681.1**	**26.5**	**768.1**	**19.6**

Table 3 shows the impact of the various changes outlined in the previous section. The combined effect is a small reduction in the gross incurred cost estimate between the valuation using 31 August data, and the current valuation.

Table 4 shows the reconciliation of the previous provision (both gross and net of reinsurance) to the current recommended provision. The impact of various changes are explained below:

- We have deducted actual payments and allowed for expected interest on the June provision to roll forward to an expected provision at October. The estimated provision at October taking into account the delay in actual payments is marginally higher

- There is a small reduction in the gross provision due to changes in claims cost assumptions (consistent with Table 3). The reduction is larger for the net provision due to an increase in the reinsurance recoveries for the September event. The September event ultimate has increased at this valuation due to a higher allocation towards September than previously. The recoveries are therefore expected to be received sooner and there is therefore less discounting
- The slowdown in the payment pattern increases the gross provision by $15 million. The net provision increases by more than this amount because the slower pattern we have adopted for Over Cap claims results in reinsurance recoveries being spread over a long period of time, which acts to reduce the present value of the reinsurance recoveries
- The change in discount rates has resulted in an increase to the gross and net provisions.

Uncertainty

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It must be stressed that a relatively large degree of uncertainty attaches to our estimates of AMI's EQ liabilities. As noted above, in recognition of this uncertainty, we have incorporated a risk margin of [redacted]% in our recommended provisions – a level which is intended to produce a 75% probability of sufficiency. This margin is considerably higher than the margins applying to AMI's other claim liabilities and is based largely on subjective judgements as to the appropriate margin to apply.

Reasonably modest adjustment to the main parameters in our valuation can cause movements of at least $50 million (both up and down) in the net central estimate of AMI's EQ liabilities. In our report dated 17 August 2011, we outline our key uncertainties in Section 7.2. These uncertainties remain valid. The key uncertainties we wish to highlight here include:

- for Over Cap properties, we have taken the view that the "tail" of late lodgements will be largely repairs and involve lower repair costs than what has been recorded to date
- there is still much uncertainty in the savings that may result from cash settlements relative to DRA assessed costs. There are not sufficient numbers to either confirm or change our assumptions to date, and the uncertainty means that the estimate could easily be either up or down from the current position
- the estimated quantum of contributions by the EQC remains uncertain, with anecdotal evidence indicating that, in a number of cases, the recoverable amount implied by AMI's DRA estimate is higher than the EQC's own estimate; we are seeking further quantitative information to explore this issue
- the sensitivity of the inflated cost and provision to the speed of the payment pattern. The speed of payments hinges on construction forecasts being adhered to

- our estimate of the gross loss for the June 2011 event remains quite approximate as there is still considerable uncertainty attaching to both the ultimate volume of claims and the expected quantum of those claims.

As the experience matures, deviations of this order in the estimated cost of these events should be viewed as normal. By the same token, testing of quite adverse development in the experience shows that it would require simultaneous and quite severe deterioration across a combination of parameters to produce a result which more than extinguishes the risk margin allowed for in our recommended provisions.

Reliances and Limitations

This letter is being provided for the sole use of AMI for the purposes stated earlier in this letter. It is not intended, nor necessarily suitable, for any other purpose. This letter should only be relied on by AMI for the purpose for which it is intended.

We understand that AMI will need to provide this letter to the Reserve Bank of New Zealand and to New Zealand Treasury. Permission is hereby granted for such distribution for this purpose on the condition that the entire letter, rather than any excerpt, is distributed.

No other distribution of, use of or reference to this letter (or any part thereof) is permitted without our prior written consent. Third parties, whether authorised or not to receive this letter, should recognise that the furnishing of this letter is not a substitute for their own due diligence and should place no reliance on this letter or the data contained herein which would result in the creation of any duty or liability by Finity to the third party.

Finity has performed the work assigned and has prepared this letter in conformity with its intended utilisation by a person technically competent in the areas addressed and for the stated purposes only. Judgements about the conclusions drawn in this letter should be made only after considering the letter in its entirety, as the conclusions reached by a review of a section or sections on an isolated basis may be incorrect.

This letter should be considered as a whole. Members of Finity staff are available to answer any queries, and the reader should seek that advice before drawing conclusions on any issue in doubt.

We have relied on the accuracy and completeness of all data and other information (qualitative, quantitative, written and verbal) provided to us for the purpose of this letter. We have not independently verified or audited the data, however we have reviewed the data for general reasonableness and consistency. It should be noted that if any data or other information is inaccurate or incomplete, we should be advised so that our advice can be revised, if warranted.

It is not possible to put a value on outstanding claim liabilities with certainty. As well as difficulties caused by limitations on the historical information, outcomes remain dependent on future events, including legislative, social and economic forces. Although we consider that the estimates have been prepared in conformity with what we believe to be the likely future experience, actual experience could vary considerably from our estimates. Deviations from our estimate, perhaps material, are normal and are to be expected.

It has been assumed that any amounts arising from the reinsurance programs protecting AMI will be fully recoverable on a prompt basis. If any reinsurance proves not to be recoverable (either through insolvency of a reinsurer or contract dispute) the net liability of AMI could be higher than stated in this letter. We are not aware of any current reinsurer insolvency problems or disputes over reinsurance recoveries.

withheld under section 9(2)(a)

Yours sincerely

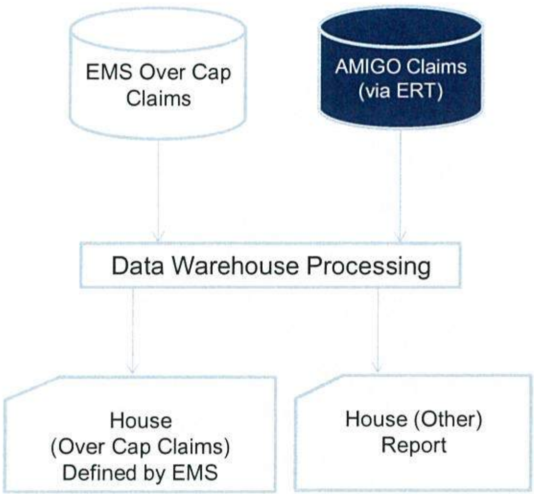
[redacted] [redacted]

Fellows of the Institute of Actuaries of Australia

A Data Reconciliation

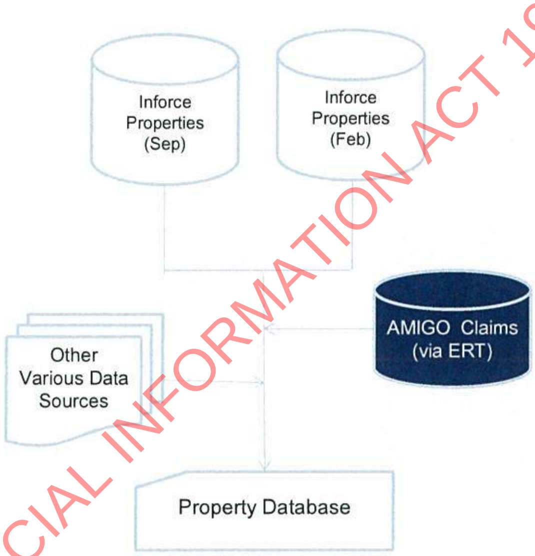
We have used data to 31 October 2011 for this valuation. There are a number of sources of data that we rely on, however the primary source is referred to as the "Property Database". We have been provided with Peter Rose's report for reconciliation purposes. Figure A.1 and Figure A.2 show how the two sources of data originate.

Figure A.1 – Diagrammatic Representation of Peter Rose's Report



Properties = number of distinct policies

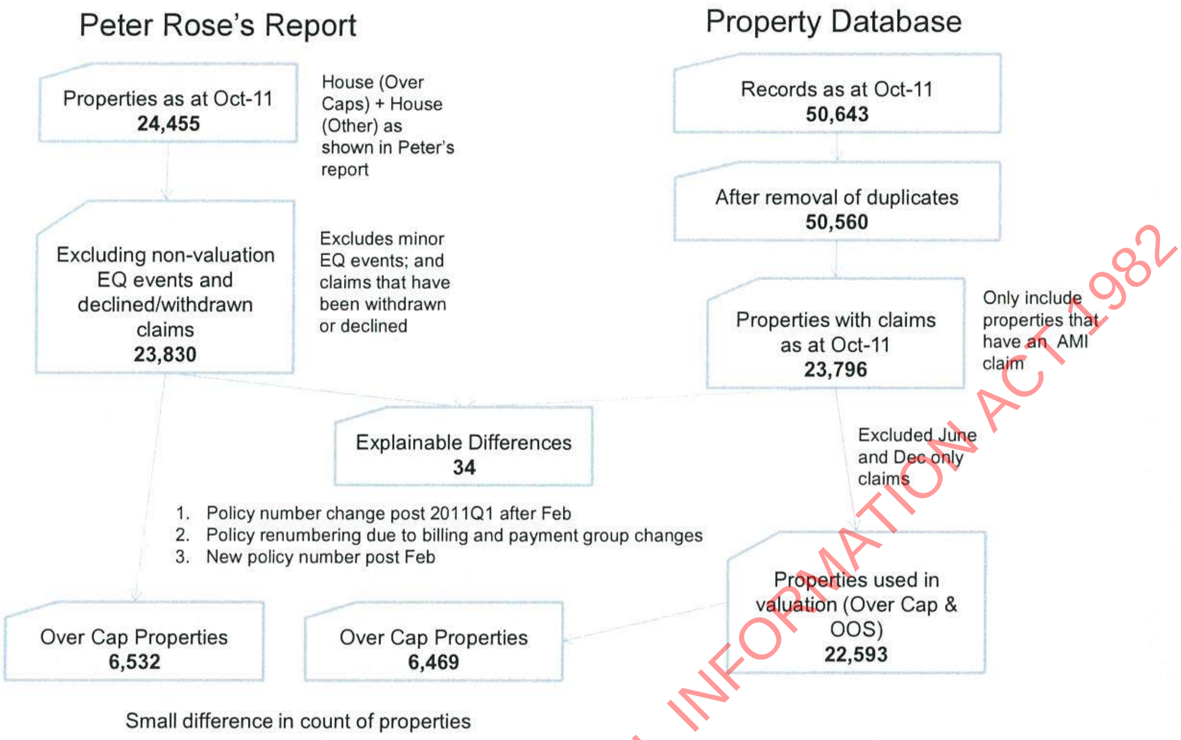
Figure A.2 – Diagrammatic Representation of Property Database



Properties = number of distinct addresses

We have reconciled the differences between the two reports to within an acceptable margin of difference, as shown in Figure A.3.

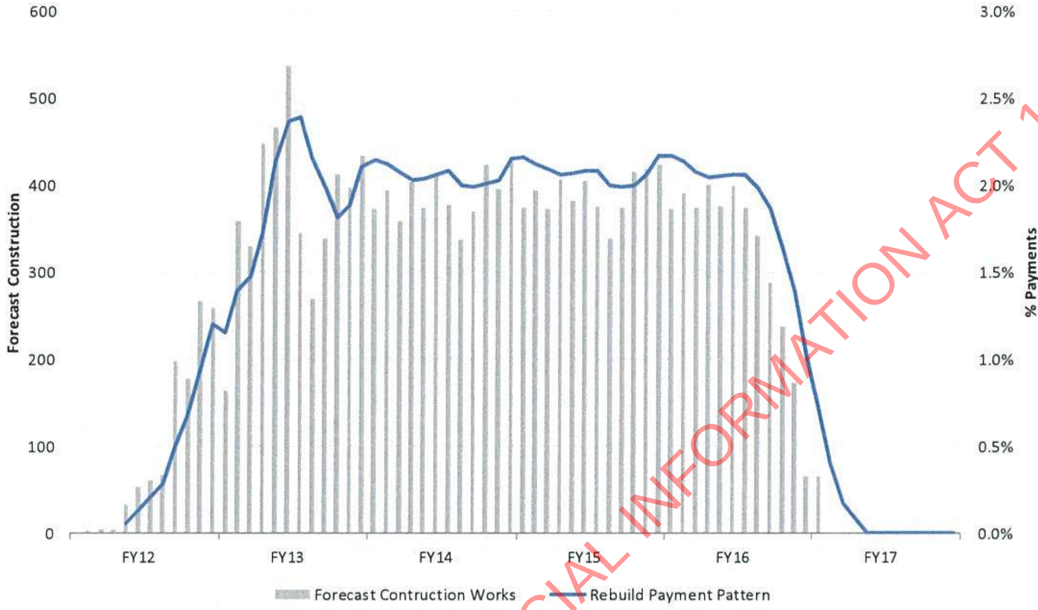
Figure A.3 – Reconciliation of Peter Rose's report with the Property Database as at 31 October 2011



B Over Cap Claims Payment Pattern

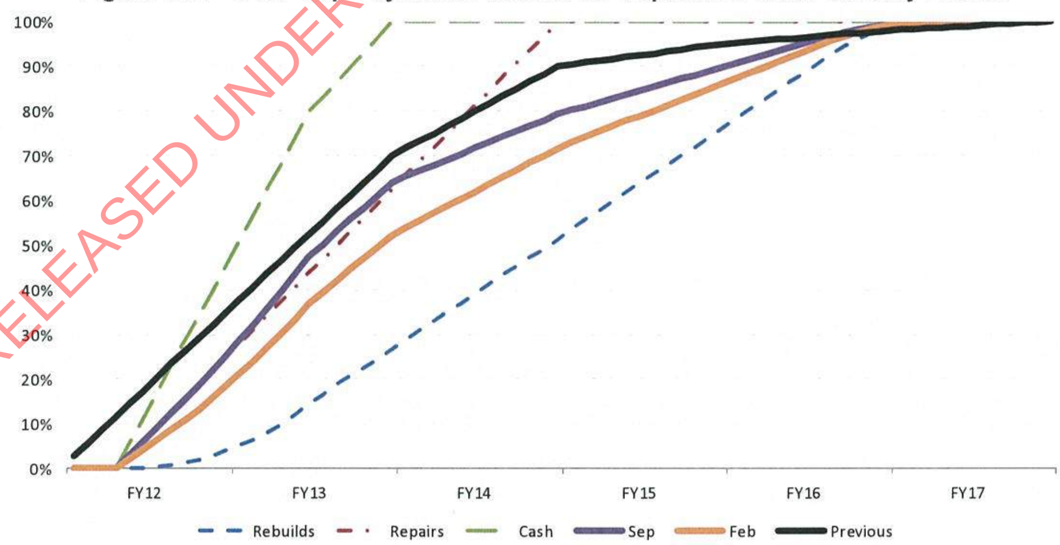
The forecast number of construction projections was provided to us by Tony Feaver, and we have used this to derive a payment pattern relating to the portion of the liabilities relating to rebuilds. The (incremental) pattern is shown in Figure B.1.

Figure B.1 – Rebuilds Payment Pattern



We have derived an average payment pattern for each of the September and February events, weighted by the estimated split between rebuilds, cash settlements and repairs. These patterns are shown in Figure B.2.

Figure B.2 – Over Cap Payment Patterns for September and February Events



A comparison of the incremental pattern by financial year adopted relative to the previous pattern is shown in Table B.1.

Table B.1 – Comparison of Incremental Payment Patterns

	Payment Pattern						
	Financial year						
	FY12	FY13	FY14	FY15	FY16	FY17	Total
Previous Over Cap Pattern	35%	35%	20%	5%	3%	2%	100%
Revised Sep Over Cap Pattern	25%	39%	15%	11%	10%	1%	100%
Revised Feb Over Cap Pattern	19%	34%	20%	14%	13%	1%	100%