Earthquake Commission
12 February 2015

Insurance Liability Valuation
as at 31 December 2014

Final Report

MELVILLE JESSUP WEAVER
Towers Watson Alliance Partner
Contents

1 Executive Summary ................................................................. 1
  1.1 Addresses ........................................................................ 1
  1.2 Report commissioned by .................................................. 1
  1.3 Purpose ........................................................................... 1
  1.4 Scope ............................................................................. 1
  1.5 Effective valuation date .................................................... 1
  1.6 This report ....................................................................... 2
  1.7 Previous valuations .......................................................... 2
  1.8 Definitions of technical terms .......................................... 2
  1.9 Event groups ................................................................. 2
  1.10 Developments since the 30 June 2014 valuation ................. 3
  1.11 Key results – claims incurred ........................................... 6
  1.12 Key results – premium liabilities ..................................... 17
  1.13 Data ............................................................................ 18
  1.14 Key uncertainties .......................................................... 19
  1.15 Key reliances ................................................................ 20
  1.16 Quality control and risk management processes ................ 20
  1.17 Key recommendations ................................................... 21
  1.18 Limitations ................................................................... 21
  1.19 MJW staff involved in the investigation ......................... 22
  1.20 Level of detail and additional information ....................... 22
  1.21 Professional standards .................................................. 22
  1.22 Authors ....................................................................... 22

2 Background ............................................................................. 23
  2.1 EQC structure and role ...................................................... 23
  2.2 Canterbury earthquakes and the implications of multiple events 23
  2.3 EQC operations outside those specified in the Act .............. 25
  2.4 EQC reinsurance ............................................................ 25
  2.5 Canterbury land damage and EQC land claim liabilities ........ 26
  2.6 New Zealand economic environment ................................. 31

3 Data and Information ............................................................... 32
  3.1 Sources of data ................................................................ 32
  3.2 Sources of information .................................................... 33
  3.3 Validation of data ............................................................. 34
  3.4 Reliances ....................................................................... 34
  3.5 Concerns and qualifications ............................................. 34
  3.6 Recommendations ........................................................ 35
  3.7 Adequacy and Appropriateness ....................................... 35

4 Canterbury Earthquake Claims Analysis .................................. 36
  4.1 Actuarial Data Extract from ClaimCentre (5 January 2015) .... 36
  4.2 Special apportionments project ......................................... 41
  4.3 ACE data ...................................................................... 41

5 Outstanding Claims Liabilities – Valuation Methodologies ........ 42
  5.1 Liability components ....................................................... 42
  5.2 Valuation groupings ......................................................... 42
  5.3 Valuation methodology considerations ............................. 43
  5.4 Valuation methodology selected ...................................... 44
  5.5 Previous valuation methodologies ................................. 44
  5.6 Gross incurred claims costs ............................................. 45
  5.7 Non-reinsurance recoveries ............................................. 46
# Appendices

<table>
<thead>
<tr>
<th></th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Canterbury Earthquakes – Background</td>
<td>76</td>
</tr>
<tr>
<td>B</td>
<td>EQC – Organisational Background</td>
<td>78</td>
</tr>
<tr>
<td>C</td>
<td>EQC Reinsurance</td>
<td>83</td>
</tr>
<tr>
<td>D</td>
<td>Information and Data – Further Detail</td>
<td>86</td>
</tr>
<tr>
<td>E</td>
<td>Data Validation</td>
<td>89</td>
</tr>
<tr>
<td>F</td>
<td>Expense Analysis</td>
<td>92</td>
</tr>
<tr>
<td>G</td>
<td>Outstanding Claims Liabilities – Detailed Methodology</td>
<td>93</td>
</tr>
<tr>
<td>H</td>
<td>Outstanding Claims Liabilities – Detailed Assumptions</td>
<td>99</td>
</tr>
<tr>
<td>I</td>
<td>Discount Rates</td>
<td>109</td>
</tr>
<tr>
<td>J</td>
<td>Glossary</td>
<td>110</td>
</tr>
</tbody>
</table>
1 Executive Summary

1.1 Addressee

This report is addressed to Ian Simpson, Chief Executive of the Earthquake Commission (‘EQC’).

1.2 Report commissioned by

This report was commissioned by EQC’s GM Reinsurance, Research and Education, Hugh Cowan.

1.3 Purpose

This report was commissioned to provide information with regards to:
- EQC’s insurance liabilities and reinsurance recoveries for use in the financial reports as at 31 December 2014.
- The development of EQC’s Canterbury earthquakes claims costs since 30 June 2014.

1.4 Scope

1.4.1 Insurance liabilities components

The insurance liabilities include:
- Outstanding (OS) claims liabilities – which relate to the future direct and indirect claims costs and reinsurance recoveries for claims incurred up to 31 December 2014.
- Premium liabilities – which relate to the future net claims costs and administration and reinsurance expenses for future claims arising from unexpired risks as at 31 December 2014.

The liabilities calculated include a risk margin and are discounted for the time value of money.

Premium liabilities are not included directly in the balance sheet but are used for the Liability Adequacy Test of the unearned premium liability provision.

A more detailed description of the nature and components of the insurance liabilities are set out in Section 1.11 as well as Sections 7 and 11.

1.5 Effective valuation date

The effective date of the valuation is 31 December 2014.
1.6 This report

Although this report includes considerable detail on all aspects of the actuarial investigations, in order to keep it to a manageable size a lot of the information has been summarised. Further details regarding the data, methods, assumptions, calculations and results underlying this report are available from the authors on request.

Unless otherwise indicated, all amounts in this report are stated in New Zealand dollars and are net of GST (i.e. they exclude GST).

1.7 Previous valuations

Melville Jessup Weaver ('MJW') has prepared valuations for EQC at six monthly intervals since 2010, when the Canterbury earthquake sequence began.

The most recent valuation for EQC, which is referenced in this report, is the Insurance Liability Valuation Report ('ILVR') as at 30 June 2014 (dated 15 August 2014).

1.7.1 30 June 2014 ILVR

In the 31 December 2013 ILVR, we produced the OS claims liabilities results assuming that repair methodologies would be utilised to remediate ILV land damage and a Diminution of Value ('DoV') approach would be used to settle IFV land damage.

The Board was concerned about the assumed land remediation strategy in as far as it was untested and not operationalised. Consequently, we were asked to provide a breakdown of the change in liabilities between 31 December 2013 and 30 June 2014 and characterise each movement as a hard ('definitive') movement or a soft ('less certain') movement.

The Board then decided that only the hard movements should be reflected in the accounts as at 30 June 2014.

1.7.2 Current report

In the current report, where we have made comparisons to 30 June 2014 results (ultimate incurred and outstanding claims liabilities), we have used the ILVR figures.

1.8 Definitions of technical terms

We have tried to avoid unnecessary insurance jargon where possible. To help understand the technical terms which were used in this report we have included a glossary in Appendix J.

1.9 Event groups

1.9.1 Canterbury earthquake claim events

A series of damaging earthquakes has affected the Canterbury region in general, and the city of Christchurch in particular, since the first event on 4 September 2010. These earthquakes have resulted in injury, loss of life, and billions of dollars of damage to infrastructure, commercial property and residential dwellings.
Details of the Canterbury earthquake events are set out in Appendix A.

For the purposes of valuing the outstanding claims, the Canterbury earthquake claims have been split into the following event groups:

- EQ1 – 4 September 2010 event
- EQ2 – 22 February 2011 event
- EQ3 – 13 June 2011 event
- EQ4 – 23 December 2011 event
- AS – the eleven other events shown on the Business Information Unit (‘BIU’) Daily Report as well as ‘Other Canterbury claims’ included in the Daily Report totals. The logic used to identify these claims is based on the claim’s Territorial Local Authority and loss cause and is consistent with the BIU’s definition.

1.9.2 Other claim events

Other outstanding EQC claims, including those arising from landslips, hydrothermal events, and from earthquakes outside Canterbury are categorised as ‘BAU’ (Business As Usual) claims.

1.9.3 Components of premium liabilities

For the purposes of valuing the premium liabilities, the following event categories were used:

- Business as Usual (‘BAU’) claims
- Minerva claims - catastrophe event claims arising from earthquakes in NZ outside Canterbury
- Canterbury earthquake claims.

1.10 Developments since the 30 June 2014 valuation

There have been a number of developments in the building and land claims valuation models since 30 June 2014.

The methods used and changes made were as follows, with further information on all of the items below being found in Section 5 and Appendix F.

The impact of these changes is shown in Section 1.11.4.

1.10.1 Canterbury earthquakes: building model

The material changes in methodology for the 31 December 2014 valuation relate to:

- Application of nil claim rates in the ACE* building model.
- Undercap building claim apportionment.

*The ACE building model uses the Apportioned Cost Estimates (ACE) data as a key input in the model. The SAS building model uses the Special Apportionment Survey (SAS) data.
**Nil claims**

Previously all potential valid building claims have been included in the modelling process and the number of claims which will ultimately settle for nil cost has been estimated using a statistical technique called Generalised Linear Models (GLMs). Given the distance through the settlement process it is now considerably clearer which claims will settle for a non-nil amount.

Nil claims are now removed from the data set prior to damage modelling. This results in a lower estimate of ultimate incurred claims costs.

**Undercap apportionment**

As at 30 June 2014, all apportionment of undercap claims was applied as per the MJW ACE model. In a report dated 5 November 2014 EQC’s statistical consultant, [Name Redacted] produced apportionment estimates specifically for undercap properties. This undercap statistical apportionment has been implemented for the 31 December 2014 valuation although it is yet to be fully ratified by EQC. While this is a key change in methodology, there was no impact on the gross ultimate claims costs. The difference in the apportionment has resulted in a small shift (circa $30m) in the claims costs from later events to EQ1.

1.10.2 Canterbury earthquakes: land model

**30 June 2014 model**

As at 30 June 2014, the land sub-claim model was based on a property-by-property liability model developed by EQC’s geotechnical engineering consultants Tonkin & Taylor and produced a liability estimate for Canterbury based on a number of inputs. This model was first introduced for the valuation at 31 December 2012.

The 30 June 2014 model had the following major components:

- Remediation costs for land damage categories 1-7.
- Remediation costs for land damage in respect of Increased Liquefaction Vulnerability ("ILV") assuming vacant land.
- Remediation costs for land damage in respect of ILV assuming a house in situ.
- DoV as the method of settling IFV damaged land.
- Remediation costs for Port Hills properties.

**31 December 2014**

The land sub-claim model has been revised for the 31 December 2014 valuation. The methodology is similar to that of the 30 June 2014 model, but there have been some refinements in the way land claims are expected to be settled and some changes in the assumptions used.

**ILV – land damage**

Over the past six months more work has been carried out in respect of EQC’s position on ILV, most notably, land trials have been completed which provide a more accurate cost of remediation.
There have also been a number of extra properties that now qualify for ILV land remediation and this has increased the land liability.

The Declaratory Judgment delivered on 10 December 2014 confirms that ILV is a form of natural disaster damage to residential land for the purposes of the Earthquake Commission Act (‘the Act’), and that EQC may – and should – develop a policy to set out how it will settle claims involving ILV. It does not impose any timeframe for the completion of a policy.

**IFV – land damage**

The Declaratory Judgment enables EQC to make payments to claimants in accordance with its IFV Policy, on the basis that:

- IFV has been confirmed as a form of natural disaster damage to residential land (not residential buildings) for the purposes of the Act;
- the use of DoV as a measure of the amount of a settlement payment, in the circumstances set out in the IFV Policy, is lawful and proper; and
- payment of claims out of the Natural Disaster Fund in accordance with the IFV Policy and the Act will be lawful.

The result of the decision was accordingly favourable for EQC. The Judgment has paved the way for EQC to proceed with IFV assessments – and eventually settlements.

The Judgment held that individual claimants may contest EQC decisions (e.g. on qualification for, and the amount of, an IFV settlement) as an ordinary civil proceeding in the District Court or High Court rather than (as EQC contended) only judicial review.

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**HAIL sites**

There is now an explicit allowance for HAIL (Hazardous Activities and Industries List) sites in the flat land areas of approximately $5 million.

**1.10.3 Canterbury earthquakes: contents model**

No material changes to the model.

**1.10.4 BAU model**

No material changes to the model.

**1.10.5 Claims handling expenses (CHE) model**

No material changes to the model. The CHE budget prepared by EQC Finance was used in conjunction with the expense analysis to produce an overall consistent result.

There was one addition to the CHE budget, this being an allowance for the transitional run-off of the PMO costs from April 2015 to December 2016.
1.11 Key results – claims incurred

1.11.1 Ultimate claims costs (Canterbury EQ only) vs. outstanding claims liabilities (all claims)

The gross incurred claims costs for all Canterbury EQ events, incurred to 31 December 2014 includes:

- Claims costs paid to date
- Claims costs expected to be paid in future (the OS claims liability).

Claims costs paid to date are known with certainty, but those to be paid in the future are unknown and so must be estimated. The approach that we have taken is to estimate the ultimate incurred claims costs and then deduct payments made to 31 December 2014 in order to determine the estimated OS claims liability.

The ultimate incurred claims costs are calculated in respect of Canterbury earthquake events only as it is not useful (or practical) to include ultimate incurred claims costs from BAU events. No risk margins have been calculated and no discounting has been applied to the estimated ultimate incurred claims costs.

The outstanding claims liabilities are in respect of all outstanding EQC claims (Canterbury earthquakes plus BAU) and are discounted for the time value of money and include risk margins at the 85th percentile.

1.11.2 Estimated ultimate claims costs – Canterbury earthquakes only

The table below summarises the main components involved in estimating the ultimate cost of claims to EQC arising from the Canterbury earthquakes only as at 31 December 2014. A more detailed version of this table, including comparatives with the 30 June 2014 ILVR, is given in Section 7.5.

The estimated ultimate claims cost is built up from the following components:

- Claims costs paid to date
- Case estimates
- Actuarial determination
- Claims handling expenses (CHE).
### Canterbury earthquakes only

**Ultimate claims costs, central estimate, undiscounted, including CHE - 31 December 2014 valuation**

<table>
<thead>
<tr>
<th></th>
<th>EQ1</th>
<th>EQ2</th>
<th>EQ3</th>
<th>EQ4</th>
<th>AS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claims paid to date*</td>
<td>2,196</td>
<td>4,276</td>
<td>412</td>
<td>135</td>
<td>182</td>
<td>7,202</td>
</tr>
<tr>
<td>Case estimates</td>
<td>(89)</td>
<td>68</td>
<td>264</td>
<td>34</td>
<td>85</td>
<td>362</td>
</tr>
<tr>
<td>Actuarial determination</td>
<td>716</td>
<td>1,835</td>
<td>31</td>
<td>42</td>
<td>(46)</td>
<td>2,579</td>
</tr>
<tr>
<td>Gross estimated ultimate incurred claims</td>
<td>2,824</td>
<td>6,179</td>
<td>707</td>
<td>212</td>
<td>222</td>
<td>10,143</td>
</tr>
<tr>
<td>Claims handling expenses (CHE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paid to date</td>
<td>414</td>
<td>468</td>
<td>118</td>
<td>70</td>
<td>77</td>
<td>1,147</td>
</tr>
<tr>
<td>Estimated future</td>
<td>80</td>
<td>85</td>
<td>34</td>
<td>29</td>
<td>25</td>
<td>253</td>
</tr>
<tr>
<td>Total</td>
<td>494</td>
<td>553</td>
<td>152</td>
<td>99</td>
<td>102</td>
<td>1,400</td>
</tr>
<tr>
<td>Gross ultimate incurred claims including CHE</td>
<td>3,318</td>
<td>6,732</td>
<td>859</td>
<td>310</td>
<td>324</td>
<td>11,543</td>
</tr>
<tr>
<td>Reinsurance recoveries</td>
<td>(1,798)</td>
<td>(2,477)</td>
<td>(0)</td>
<td>-</td>
<td>-</td>
<td>(4,276)</td>
</tr>
<tr>
<td>Not ultimate incurred claims including CHE</td>
<td>1,520</td>
<td>4,255</td>
<td>859</td>
<td>310</td>
<td>324</td>
<td>7,267</td>
</tr>
</tbody>
</table>

**30 June 2014 comparatives**

|                      |      |      |      |      |      |       |
| Gross ult incurred claims including CHE | 3,277| 6,501| 1,015| 401  | 357 | 11,551 |
| Net ult incurred claims including CHE    | 1,519| 4,024| 984  | 401  | 357 | 7,284 |

*Includes Fletcher PMO direct costs of repair (excludes 3.5% margin and infrastructure costs - included in CHE

For the 4 September 2010 event (EQ1), the central estimate, undiscounted ultimate cost of claims including CHE and gross of (i.e. excluding) reinsurance is $3.318b. The estimated reinsurance recoveries are $1.798b, giving a central estimate net of reinsurance of $1.520b.

By far the biggest single item is the $6.732b gross ultimate incurred claims (including CHE) arising from the 22 February 2011 event. This is $4.25b more than the $2.5b reinsurance available for that event.

In respect of EQ3, the gross central estimate ultimate incurred claims cost is $0.859b. This now falls below the retention point of $1b.

The actuarial determination for AS is shown as -$46m. A negative actuarial determination is due to the loading of total property damage estimates to the most recent claim, which tends to overstate the case estimates for AS (and understate for the other events).

Fletcher Earthquake Recovery (EQR) direct claim costs are included in the claims costs paid to date. Fletcher PMO 3.5% margin and infrastructure costs are included in CHE.
1.11.3 *Estimated ultimate claims costs – variability in modelled results*

The actual ultimate incurred claim costs arising from the Canterbury earthquake events will not be known until the last claim is settled. The figures shown in Section 1.11.2 are the central estimate (mean) of a distribution of modelled outcomes.

The chart above illustrates the variability in ultimate claims liabilities according to our valuation model, split by event. The numbers shown correspond to the central estimates.

The numbers underlying the chart above are shown in the following table which gives figures at various percentiles. For example, the estimated 95th percentile loss for EQ2 is $7.128b.

<table>
<thead>
<tr>
<th>Estimated gross ultimate incurred cost incl CHE</th>
<th>EQ1</th>
<th>EQ2</th>
<th>EQ3</th>
<th>EQ4</th>
<th>AS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>31 December 2014 ILVR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5%</td>
<td>$3.220b</td>
<td>$6.406b</td>
<td>$0.770b</td>
<td>$0.288b</td>
<td>$0.310b</td>
</tr>
<tr>
<td>25%</td>
<td>$3.274b</td>
<td>$6.592b</td>
<td>$0.812b</td>
<td>$0.301b</td>
<td>$0.318b</td>
</tr>
<tr>
<td>50%</td>
<td>$3.314b</td>
<td>$6.716b</td>
<td>$0.857b</td>
<td>$0.310b</td>
<td>$0.324b</td>
</tr>
<tr>
<td>75%</td>
<td>$3.356b</td>
<td>$6.942b</td>
<td>$0.901b</td>
<td>$0.320b</td>
<td>$0.329b</td>
</tr>
<tr>
<td>95%</td>
<td>$3.427b</td>
<td>$7.128b</td>
<td>$0.958b</td>
<td>$0.335b</td>
<td>$0.338b</td>
</tr>
<tr>
<td>Central Est</td>
<td>$3.318b</td>
<td>$6.732b</td>
<td>$0.859b</td>
<td>$0.310b</td>
<td>$0.324b</td>
</tr>
<tr>
<td><strong>30 June 2014 ILVR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5%</td>
<td>$3.128b</td>
<td>$6.116b</td>
<td>$0.920b</td>
<td>$0.363b</td>
<td>$0.329b</td>
</tr>
<tr>
<td>25%</td>
<td>$3.213b</td>
<td>$6.342b</td>
<td>$0.975b</td>
<td>$0.384b</td>
<td>$0.345b</td>
</tr>
<tr>
<td>50%</td>
<td>$3.273b</td>
<td>$6.496b</td>
<td>$1.014b</td>
<td>$0.399b</td>
<td>$0.357b</td>
</tr>
<tr>
<td>75%</td>
<td>$3.340b</td>
<td>$6.659b</td>
<td>$1.055b</td>
<td>$0.416b</td>
<td>$0.368b</td>
</tr>
<tr>
<td>95%</td>
<td>$3.438b</td>
<td>$6.894b</td>
<td>$1.111b</td>
<td>$0.441b</td>
<td>$0.385b</td>
</tr>
<tr>
<td>Central Est</td>
<td>$3.277b</td>
<td>$6.501b</td>
<td>$1.015b</td>
<td>$0.401b</td>
<td>$0.357b</td>
</tr>
</tbody>
</table>
1.11.4  

**Estimated ultimate claims costs – movement since 30 June 2014**

The estimated ultimate gross claims cost for Canterbury earthquake events has moved from $11.551b as at 30 June 2014 to $11.543b as at 31 December 2014. A breakdown of this change is shown below.

### Canterbury earthquakes only

**Change in estimated ultimate incurred claims cost (undiscounted, incl CHE)**

<table>
<thead>
<tr>
<th></th>
<th>EQ1</th>
<th>EQ2</th>
<th>EQ3</th>
<th>EQ4</th>
<th>AS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
</tr>
<tr>
<td>30 June 2014 ILVR</td>
<td>3,277</td>
<td>6,501</td>
<td>1,015</td>
<td>401</td>
<td>357</td>
<td>11,551</td>
</tr>
<tr>
<td><strong>Change in:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land claim costs</td>
<td>+45</td>
<td>+235</td>
<td>-69</td>
<td>-26</td>
<td>+0</td>
<td>+166</td>
</tr>
<tr>
<td>Building claim costs</td>
<td>-54</td>
<td>-69</td>
<td>-84</td>
<td>-75</td>
<td>-43</td>
<td>-324</td>
</tr>
<tr>
<td>Contents claim costs</td>
<td>+1</td>
<td>+11</td>
<td>+1</td>
<td>+0</td>
<td>+0</td>
<td>+13</td>
</tr>
<tr>
<td>CHE</td>
<td>+48</td>
<td>+54</td>
<td>+15</td>
<td>+10</td>
<td>+10</td>
<td>+136</td>
</tr>
<tr>
<td><strong>Total change</strong></td>
<td>+40</td>
<td>+231</td>
<td>-156</td>
<td>-90</td>
<td>-33</td>
<td>-8</td>
</tr>
<tr>
<td>31 December 2014 ILVR</td>
<td>3,318</td>
<td>6,732</td>
<td>859</td>
<td>310</td>
<td>324</td>
<td>11,543</td>
</tr>
</tbody>
</table>

**Net ultimate incurred claims including CHE - central estimate**

<table>
<thead>
<tr>
<th></th>
<th>EQ1</th>
<th>EQ2</th>
<th>EQ3</th>
<th>EQ4</th>
<th>AS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
</tr>
<tr>
<td>30 June 2014 ILVR</td>
<td>1,519</td>
<td>4,024</td>
<td>984</td>
<td>401</td>
<td>357</td>
<td>7,284</td>
</tr>
<tr>
<td><strong>Movements</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claims costs + CHE</td>
<td>+40</td>
<td>+231</td>
<td>-156</td>
<td>-90</td>
<td>-33</td>
<td>-8</td>
</tr>
<tr>
<td>Reinsurance recoveries</td>
<td>-40</td>
<td>+0</td>
<td>+32</td>
<td>-0</td>
<td>-</td>
<td>-8</td>
</tr>
<tr>
<td><strong>Total movements</strong></td>
<td>+1</td>
<td>+231</td>
<td>-125</td>
<td>-90</td>
<td>-33</td>
<td>-16</td>
</tr>
<tr>
<td>31 December 2014 ILVR</td>
<td>1,520</td>
<td>4,255</td>
<td>859</td>
<td>310</td>
<td>324</td>
<td>7,267</td>
</tr>
</tbody>
</table>

Shown below is a graphical representation of the change in estimated ultimate incurred liabilities.

**Canterbury earthquakes: estimated ult incurred, gross RI incl CHE**

**Movement in central estimate: 30 June 2014 to 31 December 2014**

- $11.551b to $11.543b
- $166m decrease
- $324m increase
- $136m decrease
- $11.543b

ILVR central estimates: 30 Jun 2014 to 31 Dec 2014

Land, Building, Contents, CHE changes

ILVR central estimates
Decreases
Increases
The biggest changes are in respect of land claims, building claims and CHE.

Estimated costs for building claims have decreased by $324m. The reasons for this are the increasing credibility weighting to the ACE model (from the SAS model), the inclusion of the Statistical Apportionment undercap model and the refinement in determining open building claims (refer Section 1.10.1).

The second large movement, an increase of $166m, is due to the land model. The reasons for the increase are:

- An increase in the number of properties eligible for ILV and IFV land remediation.
- A reduction in the nil claim rate, as properties are now more positively identified.
- Offset by a reduction in the estimated repair costs Port Hills properties and for non-vacant ILV repair methodologies.

The final large movement, an increase in CHE of $136m is due to the following reasons:

- Additional $24m relating to the extension of CHRP to April 2015 (it was previously due to finish at December).
- Additional $50m relating to the transitional wind down of the Canterbury Home Repair Programme (‘CHRP’) from April 2015 to December 2016.
- Additional $6m of cost to collect CHRP excesses.
- Additional $50m for Tonkin & Taylor costs. Partly due to ongoing ILV and IFV costs, but also from a more comprehensive assessment of costs.

The other gross movement since 30 June 2014 is an increase in contents claims of $13m.
1.11.5 Historical progression of ultimate incurred

The table below shows the progression of the estimated gross ultimate incurred claims costs at each valuation since 31 December 2010.

Canterbury earthquakes only
Gross ultimate incurred claims costs, central estimate, undiscounted, including CHE

<table>
<thead>
<tr>
<th>Valuation date</th>
<th>EQ1</th>
<th>EQ2</th>
<th>EQ3</th>
<th>EQ4</th>
<th>AS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
</tr>
<tr>
<td>31 December 2010</td>
<td>2,754</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2,754</td>
</tr>
<tr>
<td>Change in period</td>
<td>+494</td>
<td>+6,536</td>
<td>+1,382</td>
<td>-</td>
<td>+514</td>
<td>+8,925</td>
</tr>
<tr>
<td>30 June 2011</td>
<td>3,247</td>
<td>6,536</td>
<td>1,382</td>
<td>-</td>
<td>514</td>
<td>11,678</td>
</tr>
<tr>
<td>Change in period</td>
<td>+210</td>
<td>-22</td>
<td>-13</td>
<td>+448</td>
<td>-139</td>
<td>+485</td>
</tr>
<tr>
<td>31 December 2011</td>
<td>3,458</td>
<td>6,514</td>
<td>1,369</td>
<td>448</td>
<td>374</td>
<td>12,164</td>
</tr>
<tr>
<td>Change in period</td>
<td>-3</td>
<td>-27</td>
<td>+2</td>
<td>+69</td>
<td>0</td>
<td>+42</td>
</tr>
<tr>
<td>30 June 2012</td>
<td>3,455</td>
<td>6,487</td>
<td>1,371</td>
<td>517</td>
<td>375</td>
<td>12,205</td>
</tr>
<tr>
<td>Change in period</td>
<td>-298</td>
<td>-89</td>
<td>-253</td>
<td>-1</td>
<td>-8</td>
<td>-649</td>
</tr>
<tr>
<td>31 December 2012</td>
<td>3,157</td>
<td>6,398</td>
<td>1,118</td>
<td>517</td>
<td>367</td>
<td>11,556</td>
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<tr>
<td>Change in period</td>
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<td>+13</td>
<td>-38</td>
<td>+15</td>
<td>+63</td>
</tr>
<tr>
<td>30 June 2013</td>
<td>3,258</td>
<td>6,370</td>
<td>1,131</td>
<td>478</td>
<td>382</td>
<td>11,620</td>
</tr>
<tr>
<td>Change in period</td>
<td>-46</td>
<td>-111</td>
<td>-75</td>
<td>-75</td>
<td>-28</td>
<td>-335</td>
</tr>
<tr>
<td>31 December 2013</td>
<td>3,212</td>
<td>6,259</td>
<td>1,057</td>
<td>403</td>
<td>354</td>
<td>11,264</td>
</tr>
<tr>
<td>Change in period</td>
<td>+66</td>
<td>+242</td>
<td>-42</td>
<td>-2</td>
<td>+3</td>
<td>+267</td>
</tr>
<tr>
<td>30 June 2014</td>
<td>3,277</td>
<td>6,501</td>
<td>1,015</td>
<td>401</td>
<td>357</td>
<td>11,551</td>
</tr>
<tr>
<td>Change in period</td>
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<td>+231</td>
<td>-156</td>
<td>-90</td>
<td>-33</td>
<td>-8</td>
</tr>
<tr>
<td>31 December 2014</td>
<td>3,318</td>
<td>6,732</td>
<td>859</td>
<td>310</td>
<td>324</td>
<td>11,543</td>
</tr>
</tbody>
</table>

Results used for accounts

<table>
<thead>
<tr>
<th>Valuation date</th>
<th>EQ1</th>
<th>EQ2</th>
<th>EQ3</th>
<th>EQ4</th>
<th>AS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
<td>$m</td>
</tr>
<tr>
<td>30 June 2013 (post-DoV adjustment)</td>
<td>3,351</td>
<td>6,591</td>
<td>1,180</td>
<td>512</td>
<td>382</td>
<td>12,016</td>
</tr>
<tr>
<td>Change in period</td>
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<td>-108</td>
<td>-124</td>
<td>-90</td>
<td>-28</td>
<td>-415</td>
</tr>
<tr>
<td>31 December 2013 (post hard/soft)</td>
<td>3,285</td>
<td>6,483</td>
<td>1,056</td>
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<td>354</td>
<td>11,600</td>
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<tr>
<td>Change in period</td>
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<td>+110</td>
<td>-28</td>
<td>+2</td>
<td>+3</td>
<td>+146</td>
</tr>
<tr>
<td>30 June 2014 (post hard/soft)</td>
<td>3,343</td>
<td>6,593</td>
<td>1,028</td>
<td>424</td>
<td>357</td>
<td>11,746</td>
</tr>
</tbody>
</table>

Key reasons for the movements:

- Dec 10: EQ1 only.
- Jun 11: EQ2 and EQ3 events occurred.
- Dec 11: EQ4 event. Aggregate T&T land model.
- Dec 12: Introduction of T&T property based land model (introduced DoV).
- Jun 13: ILVR result ($11,620m) based on revised building model (ACE model introduced) and T&T property based model (with DoV on ILV and IFV). Board elected to book results without DoV ($12,016m).
• Dec 13: ILVR result ($11,284m) based on revised building model. Board elected to book only those gains that were hard / definitive ($11,600m).
• Jun 14: ILVR result ($11,551m) based on new T&T property based model (higher remediation costs for ILV and IFV) but offset by increasing dominance of ACE model (within the building claim model).

1.11.6 Estimated ultimate claims costs – land claims cost movement

Background

The land claims cost is a highly uncertain and dynamic component of EQC’s estimated ultimate claims costs. This component involves many complex engineering and legal issues and MJW relies heavily on information provided by EQC’s engineering consultants, Tonkin & Taylor (T&T).

The current land liability model is materially similar to the 30 June 2014 model although many of the parameters have been updated to reflect emerging knowledge.

The model development is further described in section 1.10.2.

Movement in ultimate incurred cost

The chart below illustrates the movement in estimated gross ultimate claims costs in respect of land sub-claims between 30 June 2014 ($1.95b) and 31 December 2014 ($2.12b).
The movement of $166m can be attributed to three key areas:

- $163m – The increase in costs associated with ILV damage arises from an increased number of properties that are eligible for remediation. This was slightly offset by a reduction in the costs of remediating non-vacant land.
- $79m – The increase in costs associated with IFV damage arises from an increased number of properties that are eligible for remediation.
- -$63m – The Port Hills properties are largely all settled. We understand that there are around 50 properties left to be completed. Allowing for a prudent level of costs for these properties and a margin for re-opened properties has still allowed us to reduce the expected ultimate cost.

Other items contribute -$13m to the total land movement.

1.11.7 Gross claim payments – comparison to previous estimates

The following chart shows actual gross claim payments for Canterbury earthquakes to 31 December 2014 (including EQR payments and CHE) as the solid black line. Projected payments from the 30 June 2014 valuation are shown as the grey broken line while the blue broken line relates to the projections from the current valuation.

Future cashflow estimates underlying this chart can be found in Section 7.8, including a split by event.

The valuation reflects our understanding of anticipated future cashflows. CHE payments are assumed to continue until 31 December 2018.
1.11.8 Gross claim payments – apportionment of paid claims

The overall gross claim payments made to date by EQC (including CHE) of $8.349b is an unambiguous figure. However, establishing the gross claim payments by event requires some judgement. This leads to different possible estimated paid event apportionments.

Overall gross claim payments can be derived by summing the following data items:

- Claim payments as recorded in ClaimCentre and provided in the Actuarial Data Extract (ADE).
- Claim payments from the EQR.
- Claims handling expenses paid.

The ADE payments are recorded at a claim level across multiple events and, as such, can be readily attributed to an event.

EQR payments are recorded as a total property cost and are notionally attributed to one of the claims related to that property, typically one of the later claims. As such, simply attributing these costs to the claim to which it is assigned will result in a bias towards EQ3 and EQ4.

The claims handling expenses are not initially attributed to a particular claim or event. These payments need to be apportioned in some fashion.

Loss Run vs ILVR

An upshot of the need to apportion payments is the arising difference between the gross payment allocation shown in the EQC Loss Run reports and the gross payment allocation found in this ILVR.

The principal difference between the two approaches derives from how the EQR claim payments are treated. The EQR payment treatments are as follows:

- The EQC Loss Run report summarises the EQR property payments by reference to the claim number assigned by EQR.
- The ILVR approach reapportions the total EQR claim payments in accordance with the overall apportionment approach in the building model.

In addition, there is also a difference in the apportionment of the CHE payments. However, this is more a timing issue than a difference in methodology. The MJW ILVR approach for apportioning CHE is to apportion based on the number of sub-claims (recorded, assessed and settled) for each event. The EQC Loss Run report uses the same apportionment ratios as produced in the most recent MJW ILVR, in this case as at 30 June 2014. The EQC Loss Run report will be aligned to this ILVR once it is approved by the Board.