



Christchurch

August 2011

**“By failing to prepare,
you are preparing to fail.”**

Ben Franklin



Overview

Multiple earthquakes and aftershocks , disruption of business, loss of life, uncertainty of what happens next, national disaster, liquefaction, richtor scale, mercalli scale:

- \$41Bn of property value (estimate of \$23Bn have mortgages) in all of Christchurch
- 188 Deaths
- 100,000 houses impacted from a stock of 135,000
- Christchurch represents approximately 10% of NZ major banks loan portfolios
- Likely cost 8% of GDP (\$15Bn)
- Cumulative affects of BI losses for 4/9, 26/12, 22/2, 13/6 claims
- Different events with different types of damage
- Total claims greater than 375,000

Summary

- Sept 2010 – 7.1 quake
 - Caused significant land damage to around 9,000 properties mostly due to liquefaction
 - No deaths
 - A smaller number of properties were damaged by ground shaking and rupture
 - The property market slowed dramatically in the days and weeks following the quake
 - 157,000 claims
- Feb 2011 – 6.3 quake
 - Caused significant land damage to around 15,000 properties mostly due to liquefaction
 - 188 deaths
 - A greater number of properties were damaged by ground shaking and rupture
 - 156,000 claims
- June 2011 – 5.6 quake
 - Caused significant land damage to properties mostly due to liquefaction
 - No deaths
 - 31,000 claims

Chch Summary by value by category

Catg Description	Sum of CV	Sum of LV	Sum of IV
A*- Arable	17,014,000	14,974,000	2,040,000
C*- Commercial	5,325,824,800	2,167,947,800	3,157,877,000
D*- Dairying	29,611,000	23,654,000	5,957,000
F*- Forestry	4,737,400	4,333,800	403,600
H*- Horticulture	98,540,000	55,709,500	42,830,500
I*- Industrial	2,760,874,850	1,350,476,495	1,410,398,355
L*- Lifestyle	131,869,200	123,604,400	8,264,800
LI- Lifestyle Improved	983,811,000	547,133,000	436,678,000
M*- Mining	4,258,000	3,274,000	984,000
O*- Pastoral	564,180,150	113,774,660	450,405,490
P*- Parks	462,979,200	383,341,300	79,637,900
R*- Res Other	542,235,730	523,844,630	18,391,100
RA- Res Appts	469,801,000	138,082,300	331,718,700
RC- Res Rental	205,246,000	129,914,100	75,331,900
RD- Res Dwellings	25,915,071,860	12,431,702,700	13,483,369,160
RF- Res Units	3,509,273,700	1,450,052,500	2,059,221,200
RH- Res Home + Inc	39,795,000	19,516,500	20,278,500
RN- Res Multi	13,280,000	4,838,000	8,442,000
RR- Res Flats	322,910,000	140,230,450	182,679,550
RX- Res Other	-	-	-
S*- Specialist	38,253,000	22,954,000	15,299,000
U*- Utilities	1,960,560	969,860	990,700
Grand Total	41,441,526,450	19,650,327,995	21,791,198,455

CV = Capital value (LV+ IV)

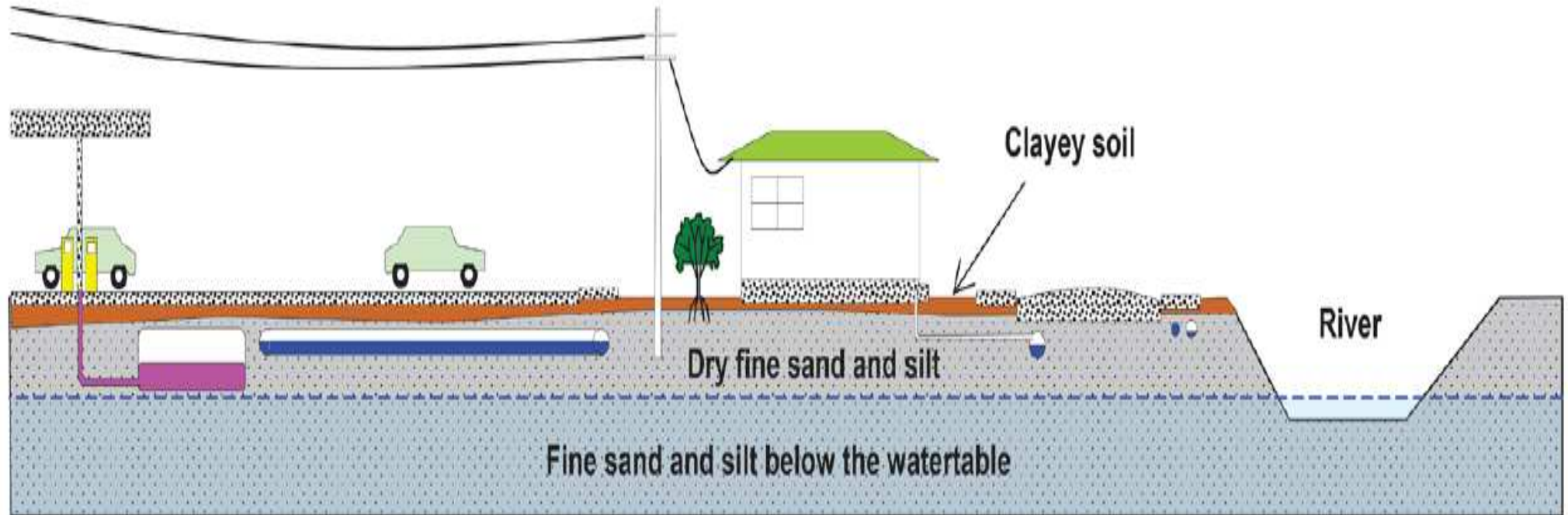
LV = Land value

IV = improvement value

Liquefaction and its Effects

Before the Earthquake

Areas of flat, low lying land with groundwater only a few metres below the surface, can support buildings and roads, buried pipes, cables and tanks under normal conditions.



During and after the Earthquake

During the earthquake fine sand, silt and water moves up under pressure through cracks and other weak areas to erupt onto the ground surface. Near rivers the pressure is relieved to the side as the ground moves sideways into the river channels.

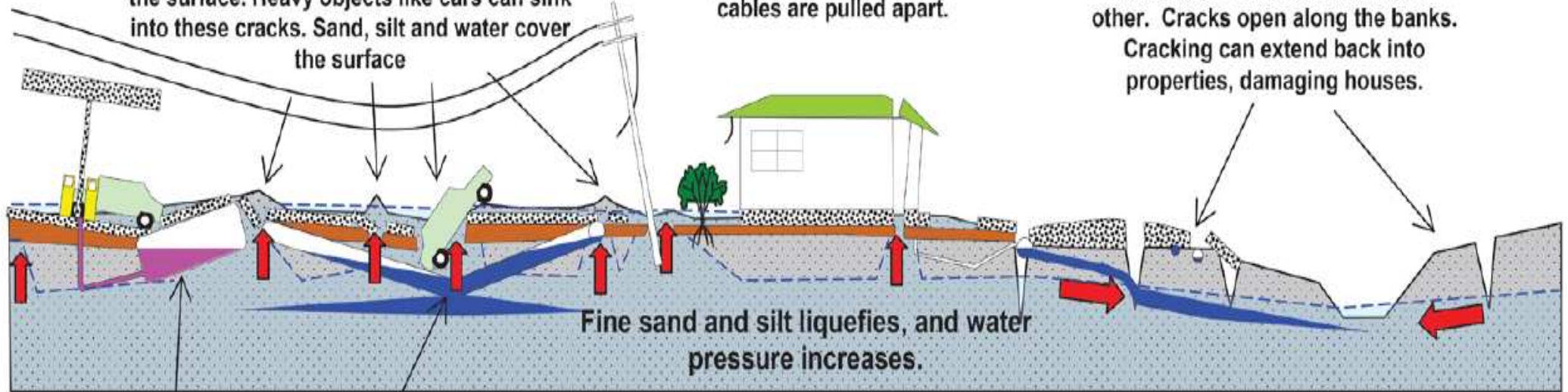
Sand Boils (Sand Volcanoes)

Sand, silt and water erupts upward under pressure through cracks and flows out onto the surface. Heavy objects like cars can sink into these cracks. Sand, silt and water cover the surface

Power poles are pulled over by their wires as they can't be supported in the liquefied ground. Underground cables are pulled apart.

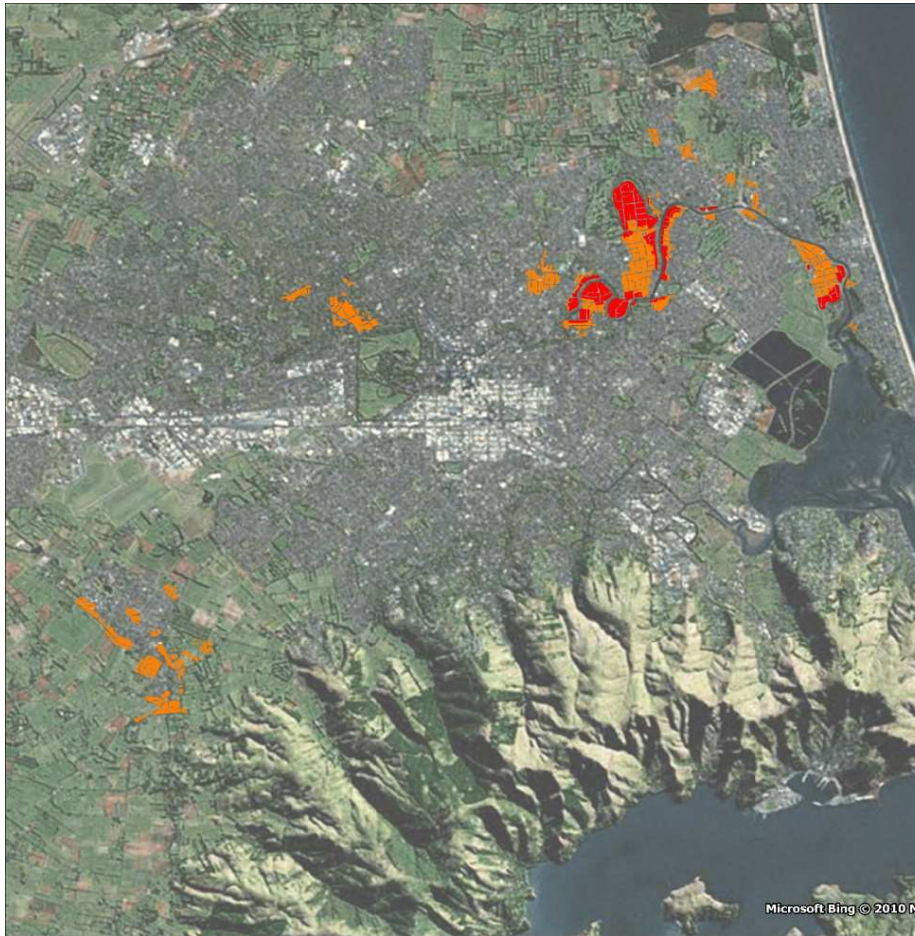
Lateral Spreading

River banks move toward each other. Cracks open along the banks. Cracking can extend back into properties, damaging houses.



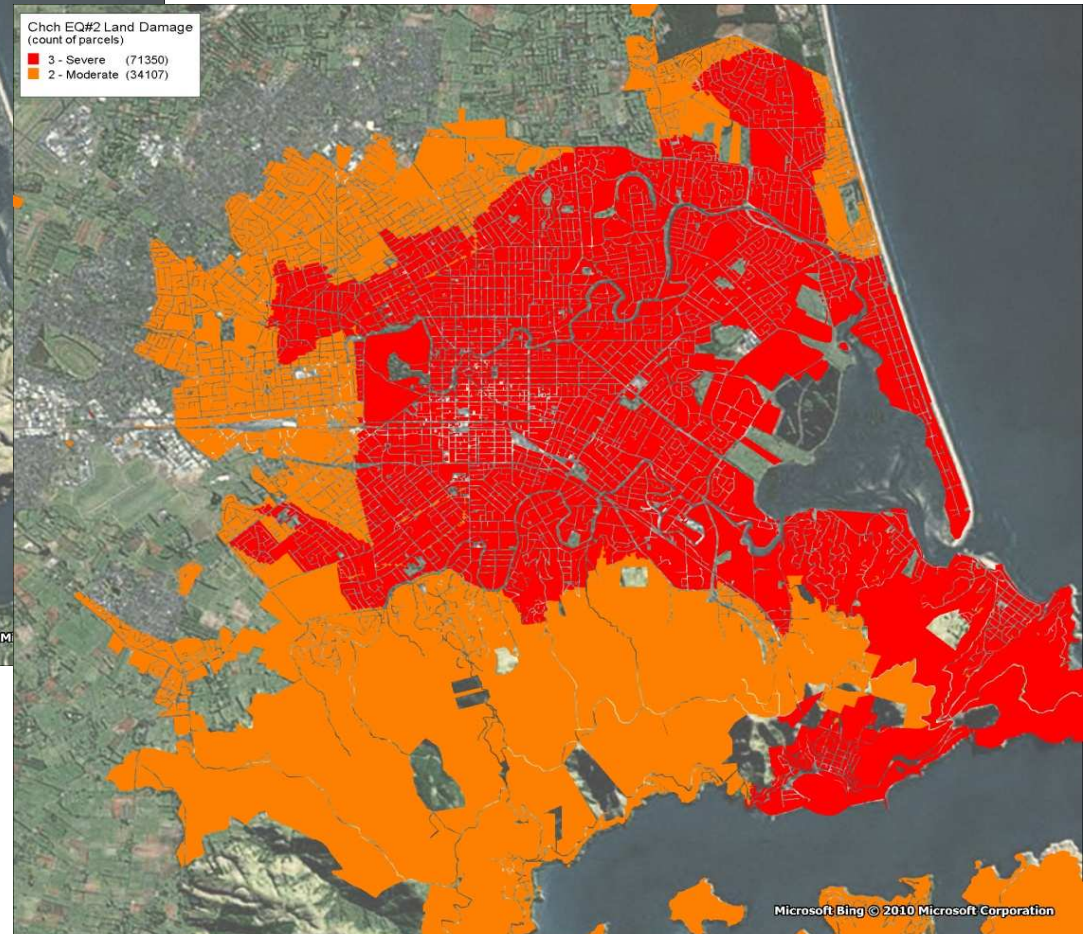
- Not all soils however, will liquefy in an earthquake
- When an earthquake occurs the shaking is so rapid and violent that the sand and silt grains try to compress the spaces filled with water, but the water pushes back and pressure builds up until the grains 'float' in the water.
- Once that happens the soil loses its strength – it has liquefied. Soil that was once solid now behaves like a fluid.

Christchurch Land Damage: EQ 1 (Sep 2010) vs. EQ 2 (Feb 2011)



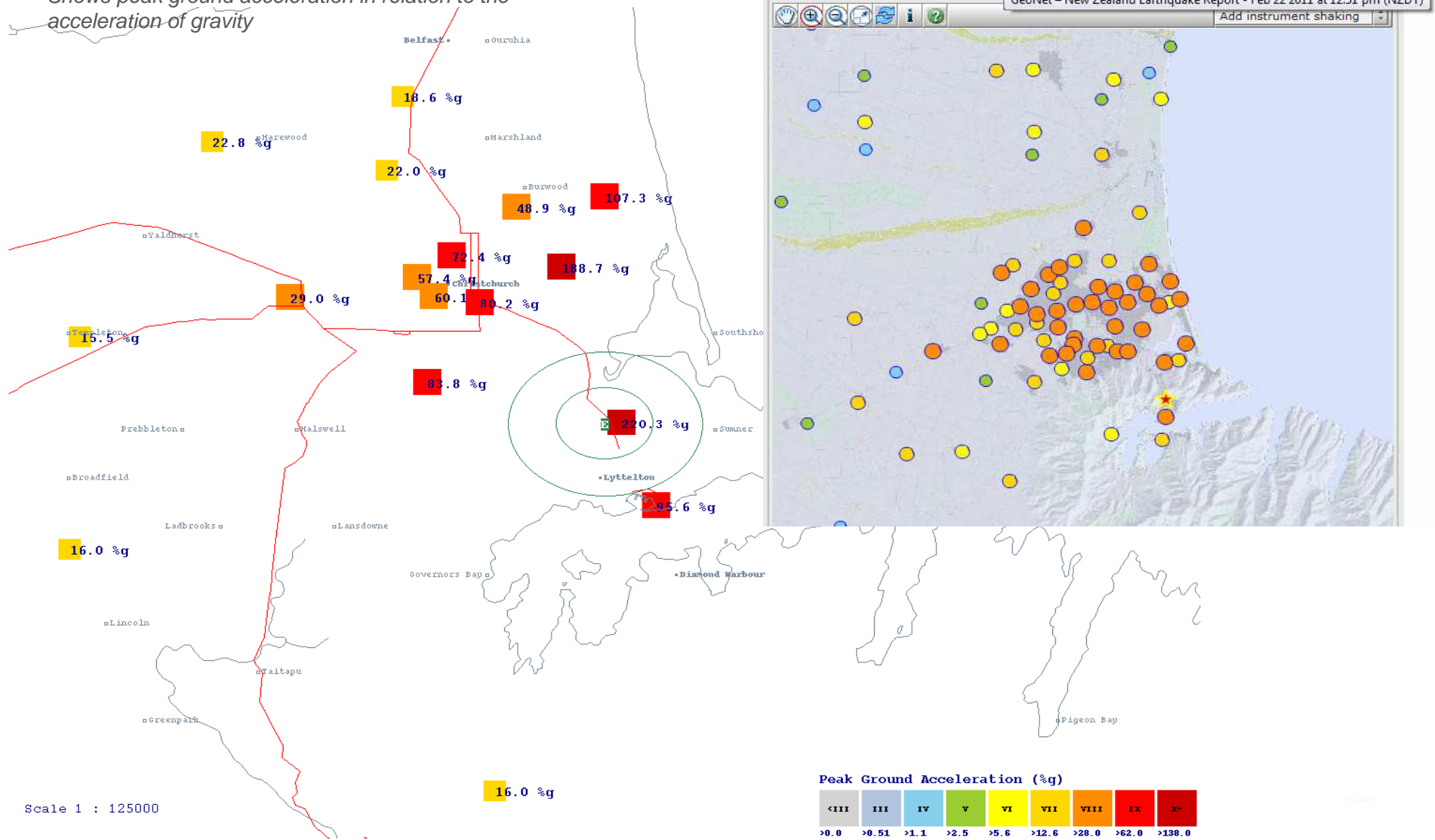
Shows Land Damage where
 Red = Severe and
 Orange = Moderate.

The EQ 2 data is initial estimates only, so is expected to be refined – however damage is significantly more severe & widespread that the Sep 2010 damage



Christchurch Earthquake 22-02-2011: Ground Shaking

Shows peak ground acceleration in relation to the acceleration of gravity



Source: Geonet.co.nz

EQC – Earthquake and war Commission

EQC is New Zealand's primary provider of natural disaster insurance to residential property owners. It insures against damage caused by earthquakes, natural landslips, volcanic eruptions, hydrothermal activity, and tsunamis; in the case of residential land, storms or floods; or fire caused by any of these.

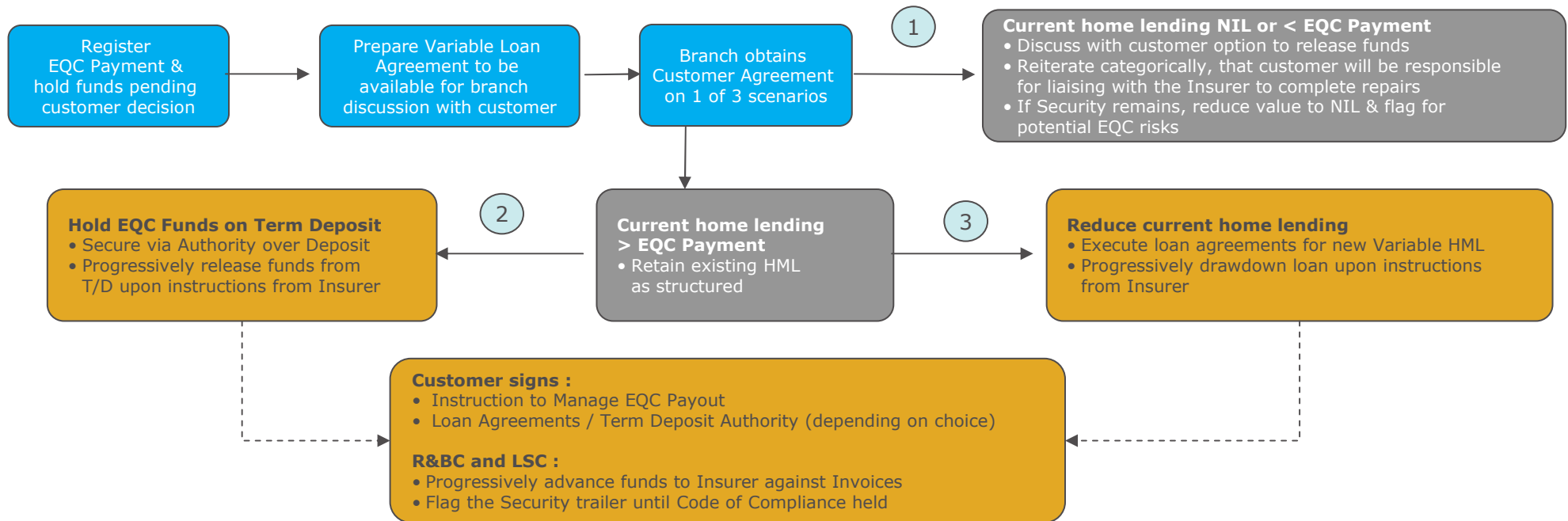
The cost is worked out at 5 cents (+ GST) for every NZ\$100 insured. The most paid a year for one dwelling and its contents is NZ\$67.50 including GST.

Source: Earthquake Commission – New Zealand

- **Fund prior to September earthquake had built up to NZD \$5.6Bn**
- **98,000 claims paid to date for \$1.1Bn**
- **EQC takes first loss to max \$100K + GST on home (15%) (equivalent of a VAT)**
- **\$20K + GST on contents**
- **+ sum to remediate land, first earthquake thought all land could be remediate, second earthquake identified that the cost to remediate to great**
- **Solution – crown to purchase land, first purchase approx 5000 properties, second purchase potentially up to 9000 properties.**

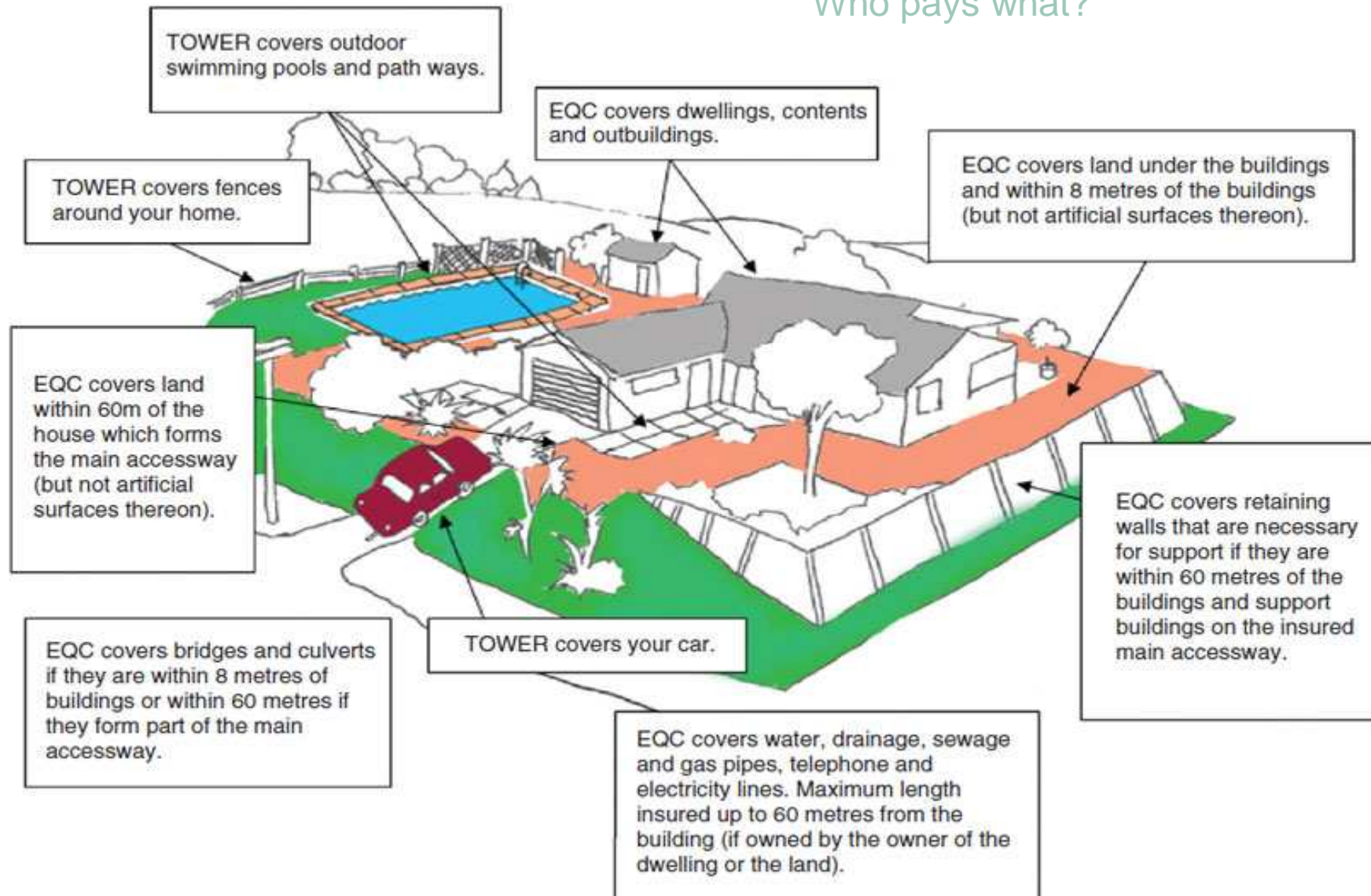
EQC Remediation

High Level Process



EQC and Private Insurance

Who pays what?



Complication – Customers



Issues

- Potential for non-insurance or underinsurance
- Customers may face loss of income and be unable to cover existing debt
- Small business customers may not be able to continue operating and service existing debt
- Small business customers may face future reduced incomes
- Small business customers may not have business interruption cover
- Number of “walk away” customers may appear, leaving vacant or damaged land/buildings
- Insurance cover may not be for a sum sufficient to rebuild to the current quality (basic replacement or fixed value cover vs. full replacement)
- EQC pays the home-owner not the bank. EQC funds may not be applied to mortgage reduction
- Loss of life and disability to primary income earner
- Potential for new and more stringent building requirements which may not be covered by replacement insurance
- Property values may be permanently lower than current levels in some more impacted suburbs

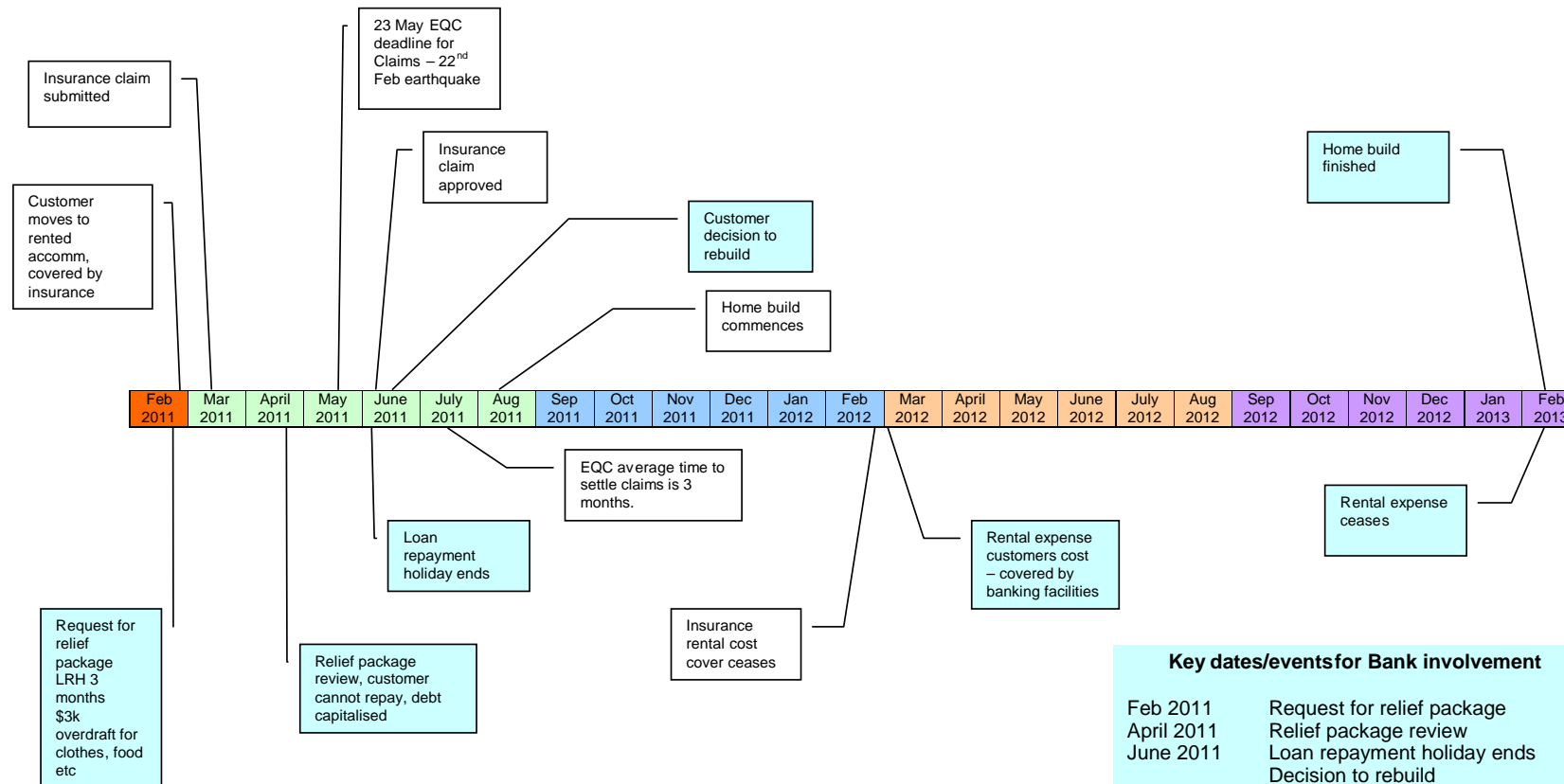
Complication – Customers



- Prevention of Access limits exhausted for cordoned areas & no building damage.
- Cordon may remain in place for many more months. No rent for landlords but still have mortgages to pay.
- Definition of damage/ threat of damage remains an issue.
- Potentially undamaged yet inaccessible property i.e. Plant and Equipment
- Customers resilient – 98% of September additional cash facilities paid back within 8 weeks.
- For the customer it has become a insurance and certainty issue.

Typical scenario without loss of income – we won't see a underlying impact until 2012

Scenario - Family of 2 adults, 2 kids, no income lost: Zone 3 red stickered 3 bedroom property, land and rebuild option Covered by insurance, includes rental funding. LVR of 70% before earthquake 8 months to rebuild with a 25% reduction in property market value once rebuilt.



Key dates/events for Bank involvement	
Feb 2011	Request for relief package
April 2011	Relief package review
June 2011	Loan repayment holiday ends
	Decision to rebuild
Mar 2012	Rental expense customers cost covered by banking facilities
Feb 2013	Rental expense ceases
	House complete

Complication- Bank

- Lending

- Settlements for mortgage stopped
 - Land and house quality uncertain
 - Insurance not available (post 30-60days after earthquake)
 - Builders insurance an issue (post Feb. quake)
 - Valuation impact not under stood
- Addendums to Letters of offer and loan agreements
- Use of geo technicians and structural engineers.
- Use of geographic mapping tools to identify Business as usual zones
- Working close with industry groups an government for relief packages

- Insurance

- Insurance available post events (short term)
- Insurance available (long term)
- Insurance premium costs
- Insurance company viability (I minor company out of busy, one major company have government guarantee for \$350M)
- Land lord insurance
- Business continuity insurance

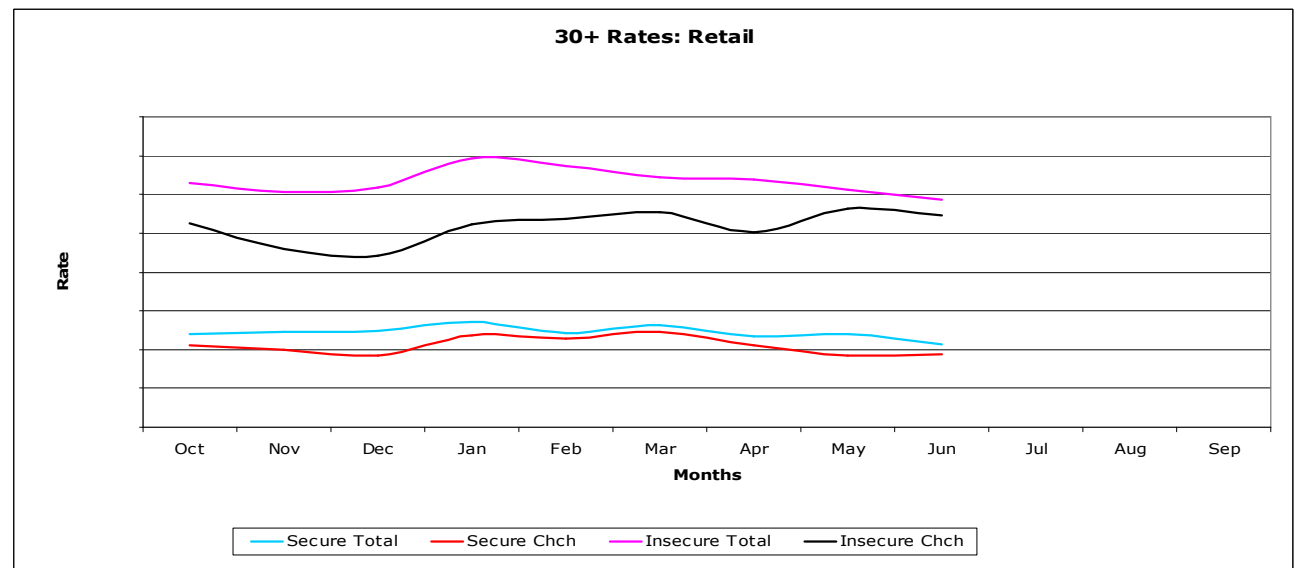
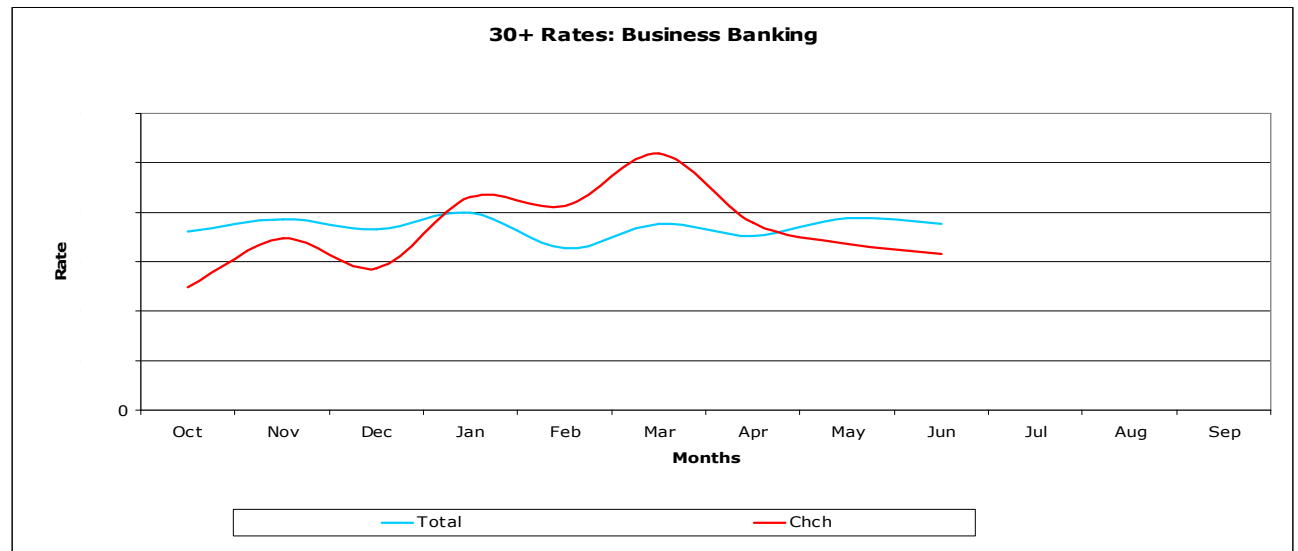


How does a lending institution address the problem

- Response
 - Most affective tools to date have been cash flow bridging facilities
 - \$15M across 3200 customers
 - 75% have been on business bank customers
 - Interest free overdraft 60 days
 - Loan repayment holidays 90 days
 - Low interest rate loans (12months at 2% less than standard variable rate)
 - Waiver fees for early payout or restructure
- Staff
 - 620+ staff work for ANZ group min Chch none were seriously hurt
 - Multiple branches out of action
 - Creation of an earthquake branch to handle issues relating to customer distress
- Other
 - Covered bonds customer removed who were affected in Chch

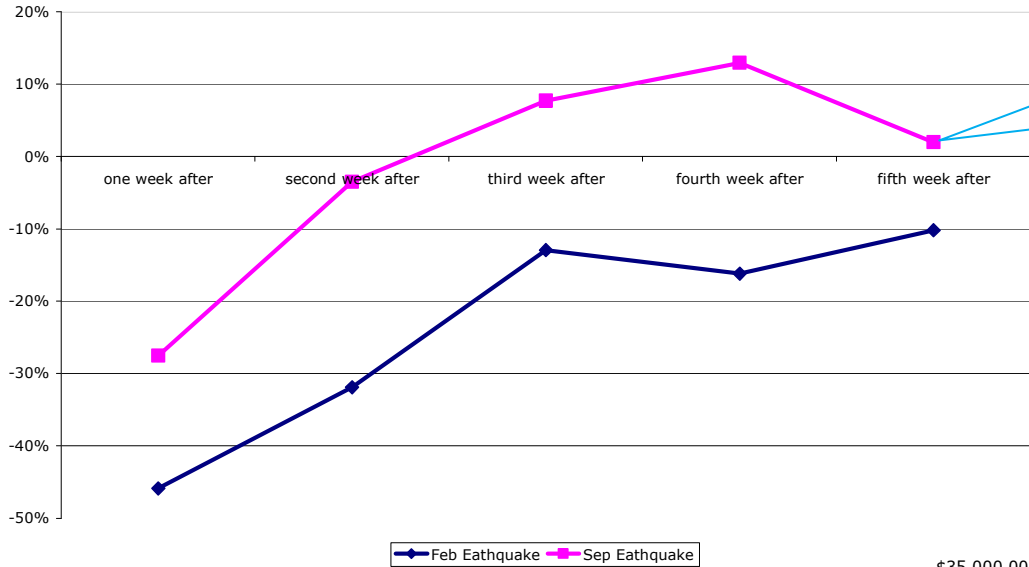
Bank Delinquency and losses

- Delinquency
 - No deterioration in delinquency, in fact movement has been greater (downwards than the rest of NZ).
 - Easy to over provision
 - Losses to date less than \$1M
 - No walk away customers (yet)



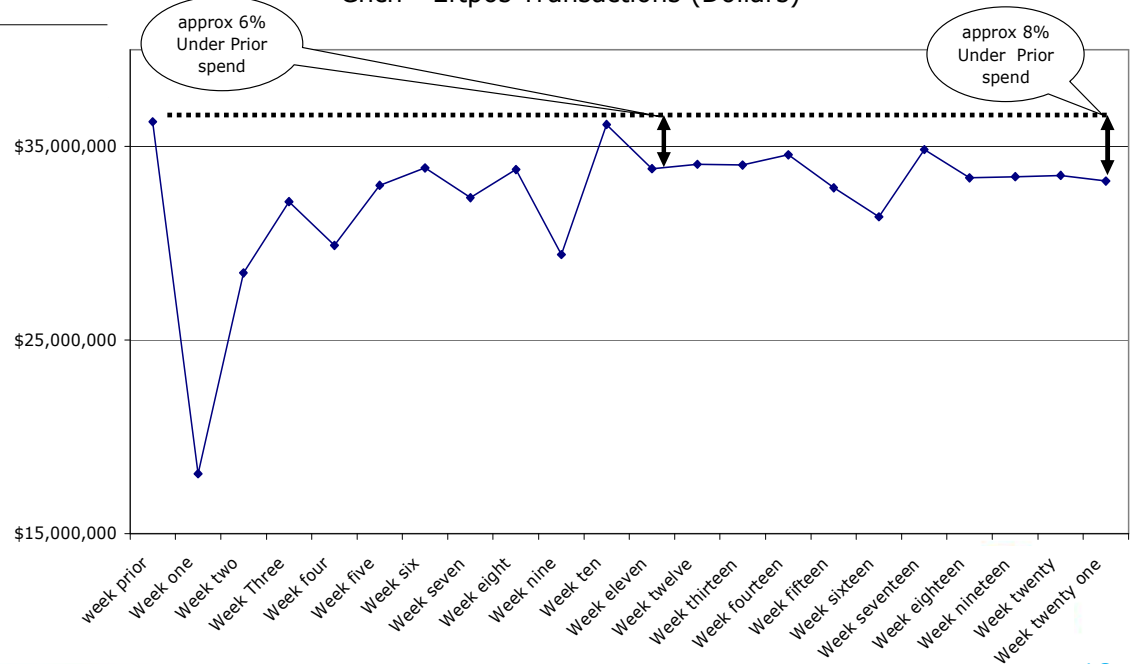
Christchurch consumer spend down \$85M top up by support packages

Transaction comparisons



September recovery evident

Chch - Eftpos Transactions (Dollars)



approx 6% Under Prior spend

approx 8% Under Prior spend

Uncertainty in values creates issues for owners, insurers and lenders

Detrimental Conditions and Stigmatized Properties

Procedures to estimate value when a property has been subject to detrimental conditions, stigma, environmental contamination, and monumental damage and therefore a negative market condition



The current definition is:

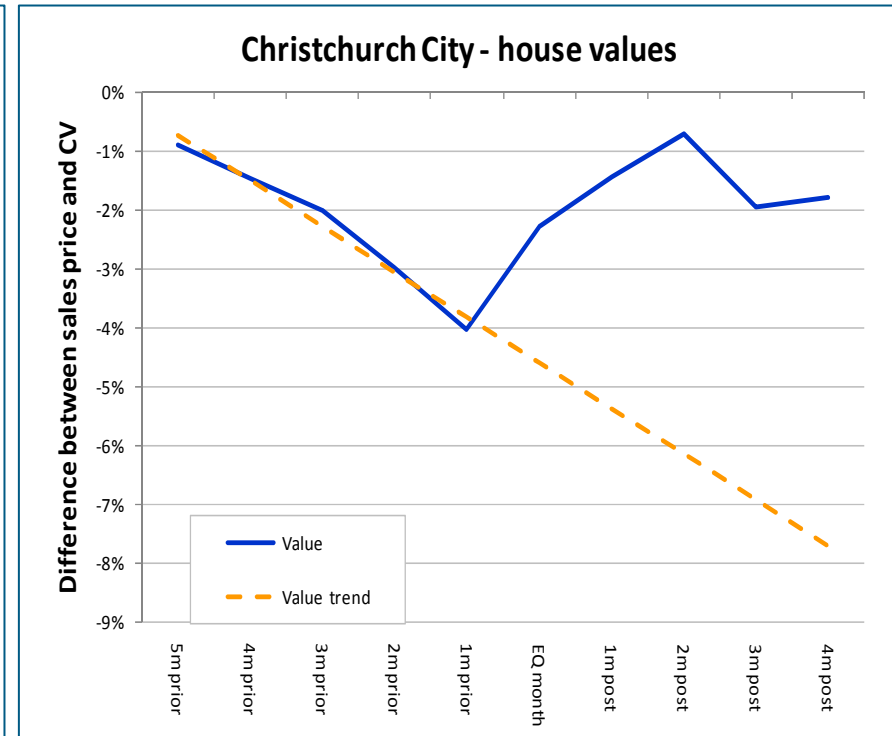
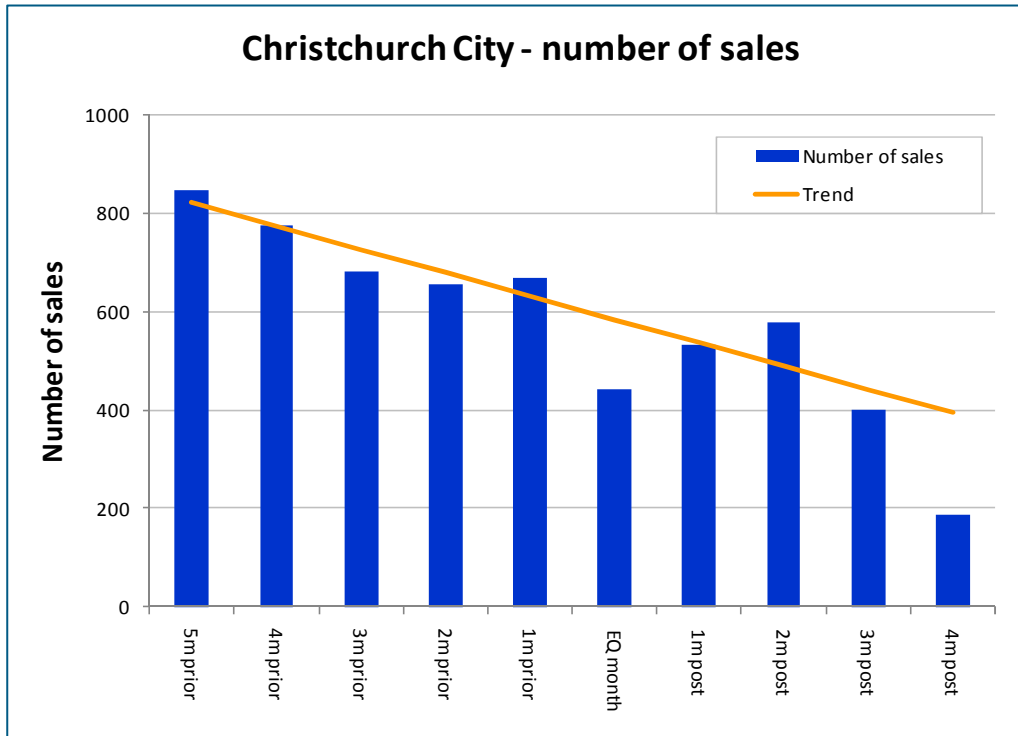
- *“The most probable price...for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with buyer and seller each acting prudently, knowledgeable ...and assuming that neither is under duress.”*

These presumptions are not satisfied after a disaster.

- **“Reasonable exposure”** is right now as the owner(s) are in need of immediate cash, have significant damage if not total loss of the property, and may have relevant insurance coverage issues that will require negotiation
- A **“competitive market”** may not exist as the damage may be localized to the extent where comparable neighbourhoods and locations and been seriously impacted also.
- The **impacted owner** may be exhibited symptoms of stress that inhibit their ability to make rational decisions.

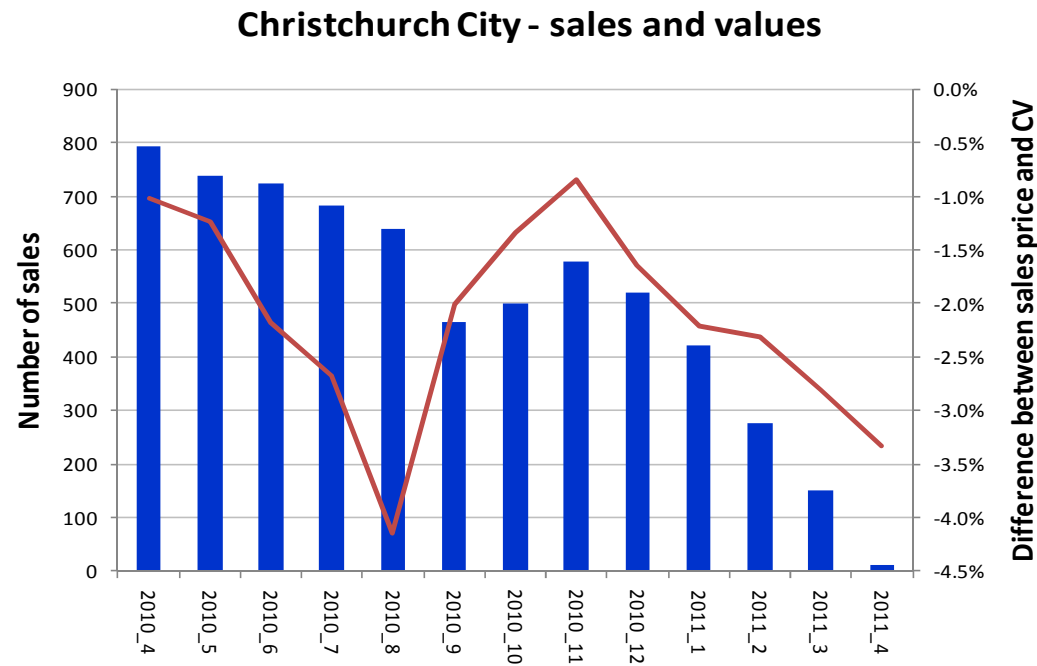
In sum, every presumption underlying this definition is not satisfied.

Christchurch earthquake Strong house price appreciation



- Sales volumes returned to near pre-quake levels after a couple of months
- Overall values immediately increased due to an increase in demand for houses in unaffected suburbs from people within the region as well as from workers from outside the region coming to help with the rebuild

Christchurch – Bubble burst



- **Prior to the September** quake values were declining, with the sales price to CV ratio dropping from -1% below CV to -4%.
- **After the quake** values recovered for three months to be less than 1% below CV
- Activity then dropped away after Christmas and values have been falling since.
- After February there is no sign of a post-quake recovery in values as there was post September.

Christchurch Issues Identified

Issues identified

- Legal issues around interpretation of cumulative damage, where EQC want to pay out but reinsurers are disputing.
- Under insurance and non insurance, where premium not correct based on house size insurance payment will be pro rata.
- Some properties unable to get insurance again or will be at rates that are prohibitive.
- Where house has minor damage in red zone but land can't be remediate customer will take option 1.
- Where house repair/rebuild insurance is greater than RV option 2 will be taken
- Any vacant land in red and orange zone is worth nothing, no EQC payment.
- In the 22 weeks since February earthquake approx \$85M of transactions have not occurred (Via EFTPOS).

Summary

- Quick reactions to bridge uncertainty has been successful for NZ banks.
- EQC has provided consistency and common approaches to bank, customer and insurers.
- Won't see delinquency and true underlying impacts until insurance payouts have been utilised and bank measure cease (18 months – 24 months) post event.
- Insurance post event impacts the ability to rebuild and lend.
- Events test banks processes (insurance cover, ability to react).
- Some industries will benefit from the event – housing, construction and related trades (those that were at the bottom of the cycle).
- Reinsurance and associated flows on to insurance pricing going forward is an issue.

Appendix Retail – Customer Engagement Strategy

	Issue	Action
Lending day 1 of event- Credit Brief	<ul style="list-style-type: none"> • Earthquake puts security at risk insurance policies are at date of settlement 	<ul style="list-style-type: none"> • You want to validate the state of your existing & proposed security (land & buildings) for all lending in the region.
Lending day 1 of event- mortgage pre approvals	<ul style="list-style-type: none"> • Want to stop pre approved offers (finance approved s.t. security) 	<ul style="list-style-type: none"> • Stop pre approval and marketing campaigns
Choosing a structural engineer	<ul style="list-style-type: none"> • With potential damaged security specific properties or zones may require an additional approval and settlement condition being a structural engineers report and or geo technical report. With land damage has occurred a geo tech is required 	<ul style="list-style-type: none"> • In discussing lending proposals with your customers we must acquaint them with having to obtain a structural engineer's report, and possibly a geotechnical report, and Registered Valuer's Report. In all cases you must confirm that the customer has full replacement Insurance with no "stand down" period.
Cost of structural engineers and geo technicians	<ul style="list-style-type: none"> • Due to need to have geo tech and structural engineers reports it is a requirement for bank to source these similar to valuations (instructed). Customer purchased reports may be accepted 	<ul style="list-style-type: none"> • In all other cases, the customer will need to pay for any structural or geotechnical engineer's reports we require.
Structural engineers outcomes	<ul style="list-style-type: none"> • As a guide in discussions with customers for lending staff in the affected region the following list should form a check list 	<ul style="list-style-type: none"> • Structural Engineers report - If clear and property is in zones 0 & 1 then proceed as per normal.
Settlement delays	<ul style="list-style-type: none"> • What happens if meeting our requirements means delaying settlement? 	<ul style="list-style-type: none"> • If meeting these new requirements will delay settlement, the customer or their solicitor needs to contact us straight away. • If the customer needs help with temporary accommodation, or storage of their belongings, we may be able to provide assistance in the short term

Retail – Customer Engagement Strategy

	Issue	Action
Structural issues	<p>If the structural or geotechnical engineer’s report says there is damage to the property or land, or recommends any repairs or reinstatement work, then we may ask the customer to provide the following additional information to help us assess the property:</p> <ul style="list-style-type: none"> –Confirmation that a claim has been lodged with the Earth Quake Commission or an insurance company. –Confirmation that the amount of damage that has been assessed by the government agency or the insurance company is less than the amount covered under your insurance policy, or the vendor’s insurance policy. –Confirmation that the property will be repaired or reinstated, and the timeframes for this. –A valuation from a registered valuer to confirm the current value of the property. You’ll need to pay for this valuation, and it must be in a form and from a valuer we approve. 	<p>If the property or the land has been affected by the recent earthquakes, then we can do any of the following:</p> <ul style="list-style-type: none"> You can choose to still accept the property as security. We’ll generally do this if any damage is minor, and will be repaired to our satisfaction. –You can decline to accept the property as security for any loans we have approved or offered, and refuse to draw down any loan amounts. –You can reduce the amount of the loan we agree to draw down to reflect the reduced value of the property. –You can refuse to draw down the loan until any works we may require to the property or the land have been completed to our satisfaction. For example, we may require repairs or stabilisation.

Retail – Customer Engagement Strategy

	Issue	Action
Letter of offer & Loan terms- bare land	<ul style="list-style-type: none"> •Customer will not have a general insurance policy for bare land. 	<ul style="list-style-type: none"> • letters of offer and pre-approval letters are to contain the appropriate additional clauses attached via an addendum. Before any offer is forwarded to customer, where the documents are produced "In branch", they must be checked and Initialled by referral officers or Branch Manager.
Letter of offer & loan terms – Construction	<ul style="list-style-type: none"> •Customer will not have a general insurance policy. Need to confirm current building project not affected and builder is covered for acts of god and earthquakes. 	
Letter of offer & loan terms – Property purchase	<ul style="list-style-type: none"> •Despite general insurance policy bank needs to know condition of property and allow customer to seek advice on property condition post event 	
Letter of offer & loan terms – Top ups	<ul style="list-style-type: none"> •Despite general insurance policy bank needs to know condition of property and allow customer to seek advice on property condition post event 	
Solicitor notification day 1	<ul style="list-style-type: none"> •With restrictions in lending being applied the best way to ensure customers are informed is via solicitor notification 	
Solicitor notification day 3	<ul style="list-style-type: none"> •To provide further clarity on processes more detailed notification is required. In addition traditional mail communication channel may be affected alternative channels need to be suggested 	<p>We've put together this overview, which covers:</p> <ul style="list-style-type: none"> •The additional requirements customers must meet for new lending against residential property in affected area •Information about insurance issues for customers buying new residential property

Retail – Customer Engagement Strategy

	Issue	Action
Insurance availability – cover notes	<ul style="list-style-type: none"> •Notification of cover via cover note may cause insurance gaps as policies may be stopped by insurer between cover note and insurance issuance 	<ul style="list-style-type: none"> •Don't accept any insurance cover notes as initial evidence of insurance cover for any properties. Some insurers that are unable to confirm that they will accept the insurance risk, despite a cover note being issued by a broker
Insurance Restrictions (example Aon insurance policy)	<ul style="list-style-type: none"> •insurers may impose restrictions on new insurance policies, including limitations on any new damage caused by an earthquake 	<ul style="list-style-type: none"> •At this time, our requirement for a property to be insured for full replacement value will not be met if the insurance policy contains these restrictions
Non conformation of insurance	<ul style="list-style-type: none"> •In special circumstance where insurance is not confirmed settlement can proceed based on land LVR 	<ul style="list-style-type: none"> •If security new or existing has a enough equity to keep the new settlement for purchase, top up etc below 80% then settlement may be considered without insurance confirmation
Insurance Back to back	<ul style="list-style-type: none"> •Back to back insurance may allow a customer to get insurance over a property they're buying without restrictions 	<ul style="list-style-type: none"> •Back to back insurance happens when the vendor already insures it with the same insurance company that a customer wants to use for their house or contents insurance. Provided the customer meets the insurance company's normal insurance criteria, then the insurance company may agree to cover the property without any restrictions for earthquake damage. The insurance company may restrict the insurance to the same level or type of cover that the vendor had
Banks Geo mapping	<ul style="list-style-type: none"> •Critical to normalise a process for settlement and lending the bank needs to confirm impact zones 	<ul style="list-style-type: none"> • The bank works with geo mapping companies that have access to drive by assessors, EQC type data, insurance data and geo mapping to

Retail – Customer Engagement Strategy

	Issue	Action
Notification to valuers	<ul style="list-style-type: none"> •Due to structural issues extra care needs to be taken with regards to siting properties 	<ul style="list-style-type: none"> •Provide specific comment on the state of repair of the house, in particular whether any damage due to the earthquake is apparent on visual inspection. •Provide specific comment on the state of the land, in particular whether any damage due to the earthquake is apparent on visual inspection. •Provide specific comment on the state of repair of the immediate neighbourhood, in particular whether any damage due to the earthquake is apparent on visual inspection. •Provide specific comment on whether any damage to the house, the land or properties in the immediate neighbourhood is likely to affect the value of the property, and your opinion as to the likely impact. •Provide specific comment on whether any damage to the house, the land or properties in the immediate neighbourhood is likely to affect the saleability of the property.
Provision impacts	<ul style="list-style-type: none"> •Provisions may need to be booked to reflect estimatable and probably losses 	<ul style="list-style-type: none"> • Use data available on exposure and affected areas as well as that from previous events to assess losses •Methodology suggest use of stress testing and GFC events to assess loss implications

Retail – Customer Engagement Strategy

	Issue	Action
Tools for loss relief (NBNZ examples)	<ul style="list-style-type: none"> •Reporting should be conducted for tools used during crisis 	<ul style="list-style-type: none"> •Tools such as Loan repayment holidays, and over draft/credit card extensions can be used to create short term relief these should be managed for impairment monitoring and specific collection calling
Loan settlement reporting	<ul style="list-style-type: none"> •In order to gauge the processing of loans reporting modules should be created 	<ul style="list-style-type: none"> •Reporting modules that cover the processing of loans is important to find where processes may be failing and what resource is required to help process loans, this type of reporting is critical
Affected zones	<ul style="list-style-type: none"> •To set up a detailed area of affected areas work with geo mapping companies should occur 	<ul style="list-style-type: none"> • Geo mapping companies should use data from insurers and previous issues to identify impacted areas
Affected property	<ul style="list-style-type: none"> •Understanding the impact to the bank properties is vital 	<ul style="list-style-type: none"> •Over laying the above reports with that of the banks mortgages will give a view on what the potential impacts may be
Valuation impacts	<ul style="list-style-type: none"> •Understanding the impacts on property prices is critical 	<ul style="list-style-type: none"> •Typical impacts significant reduction in house sales and a flight to quality usually pushing up sale values
Base line delinquency	<ul style="list-style-type: none"> •To ensure impacts are monitored immediate reporting should be set up 	<ul style="list-style-type: none"> •Delinquency and loss reports should be set up to cover the early risk drivers and metrics
Business impacts	<ul style="list-style-type: none"> •Using sources such as EFTPOS data can show significant business impacts 	<ul style="list-style-type: none"> •Two reports are recommended. Spend by volume and dollars to understand economic impacts •Second report to identify specific merchants not using their terminals can allow targeted business offers