

Submission No:	.....12.....
Date Received:	.....21-05-08.....
Secretary:	..... <i>[Signature]</i> .....

The Secretary  
Standing Committee on Climate Change, Water, Environment & the Arts  
House of Representatives  
Parliament House  
PO Box 6021  
CANBERRA ACT 2600

19 May 2008

Dear Secretary

**GENERAL INSURANCE INDUSTRY RESPONSE – INQUIRY INTO CLIMATE  
CHANGE AND ENVIRONMENTAL IMPACTS ON COASTAL COMMUNITIES**

I refer to your request dated 2 April 2008 for submissions to the Standing Committee on Climate Change, Water, Environment & the Arts. The Insurance Council of Australia<sup>1</sup> (Insurance Council) appreciates the opportunity to provide comment and in particular, to address from a general insurance perspective the impact of climate change on coastal areas and strategies to deal with climate change adaptation, particularly in response to projected sea level rise.

A 2006 report<sup>2</sup> commissioned by the Insurance Council assesses the number of Australian addresses within 3km of the coast and with baseline elevations below 4, 5 and 6 metres. It estimates that more than 425,000 Australian addresses are below 4 metres above mean sea level and within 3km of the current shoreline. Within the Greater Sydney region (Newcastle to Wollongong), 46,000 addresses are identified as being within 1km of the shoreline and with elevations less than 3m.

The majority of these vulnerable addresses are located near ocean-connected coastal waters – i.e. alongside lakes or lagoons, river banks and estuaries, rather than directly facing the open ocean. The report also notes that properties in coastal settlements that are also on inland floodplains can be liable to both river and ocean inundation, often concurrently. The potential impacts on the Australian community arising from sea level rise when combined with the current exposures to inland flooding are therefore likely to be significant.

It is in this context that the general insurance industry considers that urgent adaptive measures are required. We submit that the significant implications for the Australian economy that flow from this hazard require serious consideration and treatment.

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<sup>1</sup> The Insurance Council of Australia is the representative body of the general insurance industry in Australia. Our members represent more than 90 percent of total premium income written by private sector general insurers. Insurance Council members, both insurers and reinsurers, are a significant part of the financial services system.

2007 Australian Prudential Regulation Authority statistics show that the private sector insurance industry generates gross premium revenue of \$28.2 billion per annum and has assets of \$82.2 billion. The industry employs approx 60,000 people and on average pays out about \$70 million in claims each working day. Insurance Council members provide insurance products ranging from those usually purchased by individuals (such as home and contents insurance, travel insurance, motor vehicle insurance) to those purchased by small businesses and larger organisations (such as product and public liability insurance, professional indemnity insurance, commercial property, and directors and officers insurance).

<sup>2</sup> "A national coastal vulnerability study" prepared by Risk Frontiers (2006)

We further submit that measures designed to increase community resilience to inundation and in a broader sense, extreme weather events should be central to a national program of reform and resilience building and adaptation, including changes to planning and development regimes as well as national coastal defence, coastal retreat and back-zoning policies.

In April 2008, the Insurance Council released the attached policy paper on climate change titled *'Improving Community Resilience to Extreme Weather Events'* (Resilience Policy). The paper identifies the broad regulatory, community and industry initiatives required to assist Australian communities to successfully adapt to a changing climate and more extreme weather events.

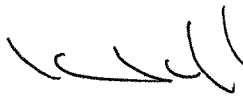
The Insurance Council submits that improving the community's ability to withstand and recover from extreme weather events is vital. The Resilience Policy builds on the general insurance industry's position in relation to risk mitigation and adaptation in terms of climate change. This policy paper outlines the important actions which need to be taken for the Australian community to be resilient to increasing severe weather. These actions centre around 6 key areas:

- Community understanding of weather related risks
- Risk appropriate land use planning & zoning
- Risk appropriate mitigation measures
- Risk appropriate property protection standards
- Financial risk mitigation in the community
- Community emergency & recovery planning

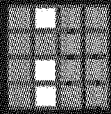
Throughout 2008, the Insurance Council will be working with governments and the community on the key actions identified in the resilience policy.

If you would like to receive a more detailed briefing on this policy, please do not hesitate to contact, Karl Sullivan, General Manager Risk & Disaster Planning, 02 9253 5155 or [ksullivan@insurancecouncil.com.au](mailto:ksullivan@insurancecouncil.com.au)

Yours sincerely



Kerrie Kelly  
Executive Director & Chief Executive Officer



**INSURANCE  
COUNCIL**  
OF AUSTRALIA

**IMPROVING  
COMMUNITY  
RESILIENCE TO  
EXTREME WEATHER  
EVENTS**

**APRIL 2008**

## ISSUE

Improving the community's ability to withstand and recover from extreme weather events, particularly those predicted as a result of climate change, requires an elementary shift in approaches to:

- Risk management of the built environment, and
- Policies and human behaviours that underpin community resilience to extreme weather events.

The purpose of this paper is to identify the broad regulatory, community and industry initiatives required in order to adapt aspects of community operation to a future environment that includes more extreme weather events. The method employed in this document is to focus on the concept of community resilience as a function of the built and social environment.

## GENERAL INSURANCE & EXTREME WEATHER EVENTS

Weather and climate are core business for the general insurance industry.

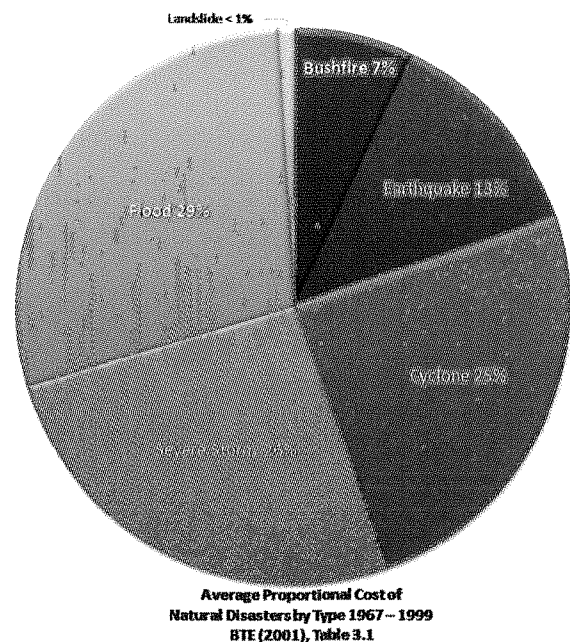
In Australia 19 of the 20 largest property losses in the previous 40 years have been weather related. It is in this context that general insurance products provide essential risk cover for Australians. The industry provides a financial recovery mechanism from weather related catastrophes by evaluating, pricing and spreading the risk of such events, and then paying claims when they arise.

The general insurance industry therefore has a heightened awareness of climate change driven by predictions of an increasing number of extreme weather events.

For some decades the global industry has been involved in research concerning the impacts of extreme weather events on communities and has keenly followed the results of climate change research as it has been matured by the scientific community.

There is agreement in the scientific community that a level of climate change can now be described as 'locked in' or as 'unavoidable'. This is regardless of even the most aggressive of mitigation and greenhouse reduction proposals. These 'locked in' changes will arrive on the back of an Australian environment that already has a rich history of weather related natural disasters. On this basis there is a strong need to adapt human behaviour to not only predicted increases in extremes but to the current level of extreme weather events that occur in Australia.

The focus for the general insurance industry is to assist in increasing community resilience to extreme weather events as they manifest now and how they may manifest into the future.



## WHAT IS RESILIENCE?

Resilience in the context of an extreme weather event is the measure of a community's or individual's ability to respond effectively to change or an extreme event.

Communities that develop a high level of resilience are better able to withstand a crisis event and have an enhanced ability to recover from residual impacts. Communities that possess resilience characteristics can also arrive on the other side of a crisis in a stronger position than pre-event. For example:

- a community with well rehearsed emergency plans;
- superior fire mitigation processes in the cooler months;
- appropriate building controls, suitable to local hazards and risks; and
- widely adopted personal and business financial mitigation measures (eg insurance suitable to the risks)

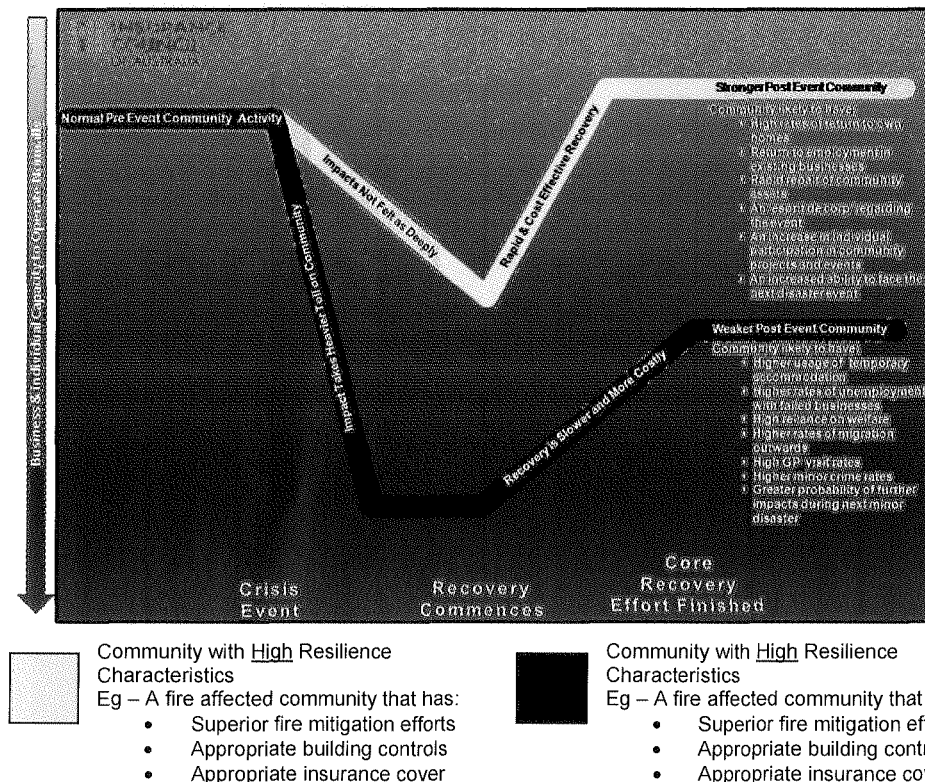
is likely to suffer less during an extreme fire event and is likely to be able to recover quickly; financially, physically and as a community.

Communities that exhibit poor resilience are unable to effectively absorb the impacts of extreme events and therefore are prone to suffering greater physical, financial and societal damage. Recovery from the extreme event takes longer and the final results are often that the community is permanently weakened and prone to further impacts from smaller scale events. For example:

- a community with poor fire mitigation processes;
- inappropriate building controls & land use zoning; and
- a low take up of personal and business insurance.

that faces the same extreme fire event as in the previous example, is likely to suffer greater financial, physical, emotional and societal impact and could be expected to take longer to recover, if at all.

**High vs Low Resilience Communities – Response to & Recovery from a Crisis Event**



## **IT'S NOT JUST THE WEATHER THAT IS CHANGING**

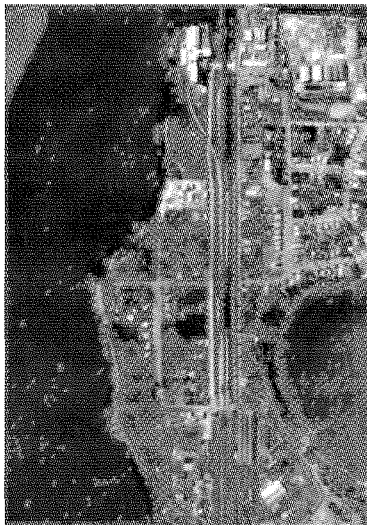
It is important to recognise that an increase in the scale and frequency of extreme weather events is not the only factor that will lead to potentially greater impacts on individuals, businesses and the community.

Urban development and growth is literally changing the Australian landscape. Prosperous communities are becoming more densely populated, construction and rebuilding costs increase each year as do the values of the individual assets that can be found inside a geographic area.

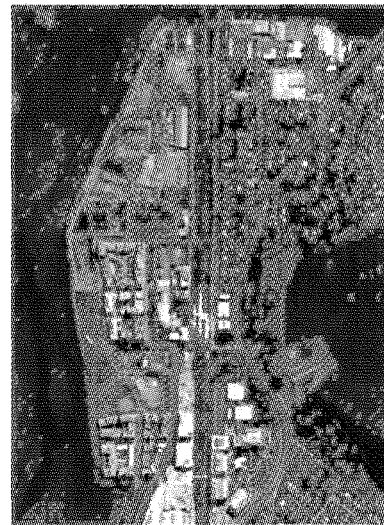
As an example, Rhodes in NSW underwent significant (but typical) urban development during the last 70 years. From the images below it is easy to see that an extreme weather event, of identical intensity, striking the same location in 2007 would cause significantly more damage than if it struck in 1930.

Models show that an extreme hail event occurring in this location in 1930 would have cost an equivalent of \$5 million. However, due to the increased development in this area, the changes in the nature of its use and a subsequent increase in the value of the assets to be found in the area – the same storm occurring in 2007 yields a potential damage bill of \$900 million.

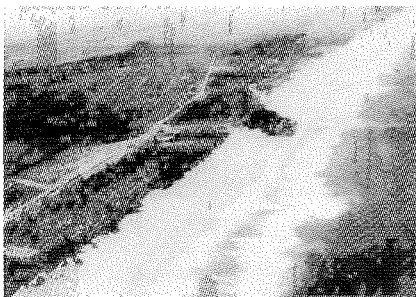
Community resilience to extreme weather events relies fundamentally on the nature of the community and the geography that it occupies. As we move forward into a climate presenting more extreme weather events it is critical that we note and where necessary adapt urban planning and development to address the growing risks and the consequential losses to the community.



Rhodes NSW [Development in 1930]



Rhodes NSW [Development in 2007]



Gold Coast QLD [Development in 1930]

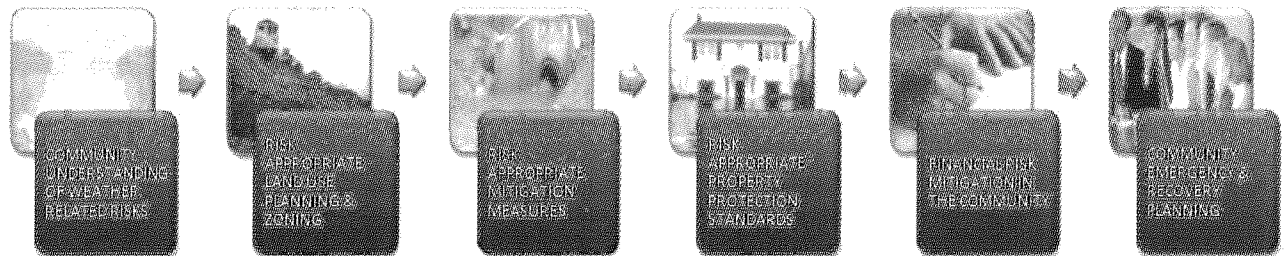


Gold Coast QLD [Development in 2007]

## **THE NEXUS BETWEEN COMMUNITY RESILIENCE AND EXTREME WEATHER EVENTS UNDER CLIMATE CHANGE**

Resilience can be characterised by six key ingredients, which in turn are driven by the community's understanding and acceptance of the risks they face in their environment.

### **The characteristics of a resilient community**





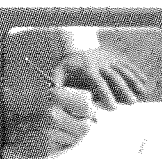
The policies, procedures and practices that enshrine the community's approach to maintaining resilience are captured by legislation and regulation at local, state and federal government levels. Building codes, state planning legislation, local government by-laws, zoning arrangements, emergency planning arrangements and even taxation arrangements all serve to guide the community in maintaining a safe and profitable approach to life and business.

This spectrum of regulations and arrangements have been formed over time and have been based upon historical assumptions about the nature, frequency and intensity of extreme weather events and coastal sea levels. For example coastal planning guidelines have been based in part on the assumption of a certain mean sea level for the life of a development. Building codes and standards have also been based upon static assumptions of historic gust wind speeds, and many stormwater mitigation and drainage systems have been designed for historic 1:100 inundation events.

So far, this approach has delivered a fitting balance between the risks and costs to the community. However, present day climate change modelling indicates that many historic assumptions used in making decisions for life-cycle management of the built environment and community operation, are no longer appropriate.

**WHO IS RESPONSIBLE FOR MEETING THE CHALLENGES POSED BY EXTREME WEATHER EVENTS?**

Responsibility for calibration of adaptive responses rests with governments, communities, individuals and industry. Each of these components needs to orchestrate individual responses in their fields of influence that contribute positively to the overall ability of Australia to maintain a prosperous and safe lifestyle in a changed weather environment. In more specific terms:

	<p><b>Governments</b></p> <ul style="list-style-type: none"> <li>• Are responsible for adapting policy, regulation and legislation that will stimulate and encourage appropriate community behaviours that increase resilience.</li> <li>• Governments are also responsible for mitigating risks that present dangers to the welfare of the community and for providing emergency response and recovery capabilities to manage the results of unmitigated residual risk.</li> </ul>
	<p><b>Individuals &amp; Business</b></p> <ul style="list-style-type: none"> <li>• Are responsible for individual decisions relating to increasing their resilience, where compliance by authority is not required.</li> <li>• For example, understanding risk information presented to them by authorities and making appropriate decisions regarding lifestyle, exposure and personal risk mitigation.</li> </ul>
	<p><b>The General Insurance Industry</b></p> <ul style="list-style-type: none"> <li>• The industry is responsible for providing insurance services in a consistent manner – providing a strong safety net to the community where the risks can be calculated, understood and capitalised in a prudent and commercially sensitive manner.</li> <li>• For example, calculating the risk of an event occurring and commercially accepting that risk on behalf of the consumer within agreed terms &amp; conditions.</li> </ul>

**WELL CONCEIVED ACTION IS REQUIRED: CO-ORDINATION IS CRUCIAL**

Australia is well placed to analyse and implement resilience strategies in the face of more extreme weather events.

The establishment of a central federal and state sponsored facility, responsible for coordinating research, stakeholder engagement and community communication is considered an essential step towards improving community resilience in the face of climate change. The general insurance industry notes the recent founding of the Climate Change Adaptation Centre (CCAC) which should provide Australia with a suitable structure in which to mix the relevant considerations and develop a well considered strategic approach to improving resilience to future extreme events.

The general insurance industry supports the efforts of the CCAC and trusts that it will lead to the development of consistent and harmonised policy at state and federal levels, as well as guidance for industry, business and individuals that will meet the adaptive challenges before us.



## WHAT ARE THE LIKELY IMPACTS OF MORE EXTREME WEATHER EVENTS ON THE COMMUNITY?

One of the key issues facing the community and decision makers is the abundance and variability of climate predictions and assumptions. Understanding the modelled predictions in an Australian context is critical to formulating appropriate resilience & adaptation policy.

The predictive science of climate change continues to improve, most notably with the recent release of the CSIRO's *Climate Change In Australia Technical Report 2007*<sup>1</sup>. While it is acknowledged by climate experts that no climate model can be considered perfect, inter-model comparison is now delivering predictions of sufficient clarity to enable the development of policy settings around community resilience.

## COMMUNITY UNDERSTANDING OF WEATHER RELATED RISKS

Community attitudes to climate risk vary based on a multitude of factors including; previous exposure to extreme events, predominant industries relied upon for local employment, lifestyle factors and most importantly the calibre and consistency of risk based knowledge presented and absorbed by the community at large.

The occurrence and impacts of extreme weather events is a subject that is prone to speculative discussion at all levels in society, often based upon predictive data with considerable bands of error. Consequently, communities can become unable to focus attention on key risks that they realistically face.



There is a pressing need for the development of contextual communications programs that deliver 'best of breed' risk information to the community, that place Australian communities in the best position possible to understand the practical measures that will need to be implemented in their environment, as well as at a personal level, to adapt and become resilient to extreme weather events.

Risk disclosure to community members who currently own property or who consider a purchase of property is a further crucial issue. Measures to actively provide community members with best known risk data, both extant risk and agreed predictive data, will place individuals and communities in the best position possible to make decisions regarding the weather risks they are prepared to tolerate in a location and most importantly, decisions regarding the adaptive behaviours they may undertake to accommodate those risks.

A COAG scheme requiring the state by state development, maintenance and publication of present risk data and a projection of changes to the risk over the next 100yrs<sup>2</sup> is required in order to place communities in the best position possible to make risk appropriate decisions with regard to property and lifestyle choices. Such a scheme should require delivery of government endorsed risk data regarding temperature extremes, coastal inundation, extreme rainfall events, windstorm, hail, bushfire and flooding risk, in a format that is easily digested by communities and is freely available to individuals on a scale that is relevant.

Climate change commentary and litigation<sup>3</sup> has already commenced a similar trajectory to the history of liability presented by dust diseases and tobacco smoking in the 50's and 60's. It is conceivable that the restriction, intentional or otherwise, of risk information from an individual concerning known or predicted climate change risks, that could influence a purchase, development or lifestyle choice could open further issues of liability on behalf of the authority responsible for the information.

<sup>1</sup> Available at <http://www.climatechangeinaustralia.gov.au/>

<sup>2</sup> 100yrs is used in this context to represent the predicted life-cycle of a typical man made structure in Australia. Some buildings may be designed with longer life-cycles in mind and consequently risk predictions concerning the operating environment of the building would need to be suitably projected.

<sup>3</sup> For example, *Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc v Minister for Environment & Heritage* [2006] FCA 736 or *Gray v The Minister for Planning* [2006] NSWLEC 720.

Of course, delivery of risk information to individual decision makers is irrelevant if those decision makers do not incorporate the information into their risk assessment. Consequently, there is a mutual obligation on the community and individuals to absorb risk information as presented and then to take action to treat, avoid or accept the risks.

It may well be that individuals decide to accept certain climate related risks when it comes to property development or selection – What is important is that awareness of the risks is raised both in ambient sense, ie a sense of increasing risk and the need to be aware of them permeates society, and in regard to very specific modelled risks associated with particular cadastral parcels of land, community practices or business operations. Individuals should not ‘sleep walk’ into decisions that have risk factors for want of risk information being available.

AS4360<sup>4</sup> provides a sound basis for risk management practices at all levels of society, provided appropriate awareness is built regarding the risks and the application of the standard. It is recommended that individuals and businesses implement annual risk management strategies as a normal practice, that incorporates extreme weather event risk information.

#### KEY ACTIONS TO IMPROVE COMMUNITY RESILIENCE

##### General Insurance Industry

- ▶ Provide industry advice and research to governments and the community regarding the probabilities and costs of extreme weather events.

##### Governments

- ▶ Develop a concise public education campaign through an appropriate authority regarding specific climate change impacts and changes to extreme weather events for communities on a regional basis.
- ▶ Implement mandatory risk information disclosure and acceptance requirements as part of all State based property transfer regulations for all extant and predicted risks relevant to a property.

##### Individuals & Businesses

- ▶ Use of the presented education information to make risk appropriate decisions regarding assets and operations as part of an annual risk assessment & management cycle.

## RISK APPROPRIATE LAND-USE PLANNING & ZONING

Risk appropriate use of land is a critical issue in Australia.

In the past decade state governments have individually enhanced land-use planning guidance and regimes in various ways. In the majority of instances, state governments have issued high level parameters for local governments to include in local planning and development schemes.

The high level parameters offer broad development principles for local bodies to enshrine in decisions regarding what is, or is not, an appropriate development in the local area.

The results of poor land-use planning and decisions are now, with some notable exceptions, legacy issues. There are examples across the country of legacy development that has occurred in a “risk inappropriate” fashion. For example, many thousands of residential properties on Queensland’s Gold Coast have been authorised and constructed in locations that place them at extreme risk of catastrophic flooding and coastal inundation.

On the positive side of land-use planning, the implementation of mandatory cyclone building controls in historically cyclone prone local government areas has seen a dramatic decrease in the damage sustained (to newer properties) from that hazard.



<sup>4</sup> Australian Standard for Risk Management

The predicted impacts of future extreme weather events underscore the need for a renewed focus and emphasis on risk appropriate selection of land for development. With many of the current risks predicted to increase over the accepted life-cycle of a man-made structure, it is necessary for governments to ensure that new structures are constructed in a location and manner suitable both to the risks experienced today at that location and those risks predicted at the anticipated end of life for the property.

The following development guidance is considered critical:

- **A Minimum Standard for Riverine Flooding Risks** – Rainfall models under climate change for Australia indicate a drier average climate with greater peak events. Greater peak rainfall events will lead to more incidences of flooding in the community as traditional floodwater mitigation and drainage systems fail to cope with larger events. The nexus between increased sea levels and increased peak rainfall events further underscore the need for greater attention to be paid to land-use selection under a changed climate, these include considerations such as:
  - No residential or commercial development should be authorised on land that is presently subject to a 1:50 ARI flooding risk or a predicted 1:50 ARI flooding risk within the next 100yrs, without flood mitigation works incorporated into the development that reduce the risk to a minimum of a 1:100 ARI flooding risk.
  - Zoning for existing land where the flooding risks greater than 1:50 ARI presently exist and where flood mitigation works are not being implemented should be altered to stipulate non residential and non commercial uses only.
  - Zoning for existing land where flooding risks are predicted to deteriorate to 1:50 ARI and where flood mitigation works are not being implemented should be altered to stipulate non residential and non commercial uses only from the time that the flood risk is predicted to become a potential.
  
- **A Minimum Standard for Coastal Inundation Risks** – Coastal risks include average sea level rise and compounding storm surge activity from increasingly severe storm activity. The chief risk is from extreme weather events where increased average sea levels are exacerbated by extreme wind activity and low pressures. The predominance of coastal living as a lifestyle choice in Australia combined with the increased risk of storm surge impacts, necessitates consideration of issues such as:
  - No residential or commercial development should be authorised on land that is presently subject to a 1:50 ARI storm surge event or a predicted 1:50 ARI storm surge event within the next 100yrs, without storm surge mitigation works incorporated into the development that reduce the risk to a minimum of a 1:100 ARI risk.
  - Zoning for existing land where the storm surge risks greater than 1:50 ARI presently exist and where storm surge mitigation works are not being implemented should be altered to stipulate non residential and non commercial uses only.
  - Zoning for existing land where storm surge risks are predicted to deteriorate to 1:50 ARI and where storm surge works are not being implemented should be altered to stipulate non residential and non commercial uses only from the time that the storm surge risk is predicted to become a potential.
  
- **Wind Storm & Cyclones** – Cyclone activity has been predicted by the CSIRO<sup>5</sup> to decrease overall by up to 44% in some areas of Australia. However, the number of extreme cyclone events (Category 3-5) is expected to increase. That is, there will be a higher percentage of more destructive and longer living cyclone events. Furthermore, the average decay location of cyclones is predicted to move southwards by up to 3<sup>o</sup> of Latitude giving rise to consideration that:
  - The geographic extent of mandatory cyclone resistant building standards described by the Building Code of Australia and relevant Australian Standards should be extended to cover all land-use and development in Australia, North of 33<sup>o</sup>S Latitude, or a line running east to west through Newcastle NSW.

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<sup>5</sup> Commonwealth Scientific and Industrial Research Organisation

## KEY ACTIONS TO IMPROVE COMMUNITY RESILIENCE

### General Insurance Industry

- ▶ Provide industry advice and guidance to governments and the community regarding the risk implications of particular developments and projects under consideration with regard to extreme weather events.

### Governments

- ▶ Implement risk appropriate land use planning legislation harmonised across all states to prevent inappropriate development on land subject to inundation, specifically:
  - ▶ No residential or commercial development should occur on land currently subject or predicted to be subject to a 1 in 50yr return period of riverine flooding unless mitigation works have been carried out to maintain a 1 in 100yr risk exposure limit.
  - ▶ No residential or commercial development should occur on land currently subject to or predicted to become subject to a 1 in 50yr return period for storm surge unless mitigation works have been carried out to maintain a 1 in 100yr risk exposure limit.
- ▶ Implement a southerly expansion of cyclone and wind storm related building codes to counter the predicted southerly expansion of severe cyclones.
- ▶ Implement legislation harmonised across all states requiring mandatory disclosure of all known & predicted risk data by state & local governments to property purchasers during property conveyance and title search processes.

### Individuals & Businesses

- ▶ Critical assessment of each purchase of new property and the future risks to current property, then implement appropriate adaptive behaviour to lower or avoid the risks.

## RISK APPROPRIATE MITIGATION MEASURES

In Australia the *National Disaster Mitigation Program*<sup>6</sup> provides an application and funding mechanism for mitigation projects aimed at reducing community exposure to natural hazards.

For approved projects the program provides 1/3<sup>rd</sup> of funding from a federal fund and typically 1/3<sup>rd</sup> funding from both the state and the affected local government respectively. Projects are prioritised intrastate by relevant state planning bodies with assistance from applicant local governments. Projects are not prioritised nationally.



Mitigation projects in the context of the program includes:

- Natural disaster risk management studies;
- Disaster mitigation strategies;
- Investment in disaster resilient public infrastructure;
- Structural works to protect against damage (eg. disaster proofing of existing buildings at risk; levees, retarding basins and channel improvements, permanent fire breaks, other engineered works that offer protection from natural disasters);
- Disaster warning systems;
- Community awareness and readiness measures;
- Audits of levees and warning systems;
- Disaster and mitigation related research of public benefits;
- Development of nationally consistent data collection and analysis;
- Development of nationally consistent post-disaster evaluations;
- Geographic Information Systems (GIS) based hazard and flood data for disaster mitigation purposes; and
- Land and building purchase schemes in high-risk areas.

The current objectives of the mitigation program remain appropriate but its community relevance under climate change predictions will increase in direct proportion to the gravity of predicted climate change induced hazards.

However, there is one notable and critical omission from the list of program objectives – stormwater mitigation and drainage works.

It is the view of the Insurance Council that urgent consideration needs to be given to expanding the program to include projects that are aimed at replacing or upgrading critical stormwater mitigation works in communities. The

<sup>6</sup> A commonwealth and state program administered by the Federal Department of Infrastructure, Transport, Regional Development and Local Government.

failure or inadequacy of public stormwater mitigation accounts for approximately 1/3<sup>rd</sup> of water damage experienced by private property owners during large rainfall events. Federal funding for this program has remained relatively static for the previous 3 years at approximately \$20mil per annum. Under each of the various climate change scenarios it is increasingly clear that there will be greater funding calls upon each available component of the mitigation program, in particular the more expensive classes such as resilient public infrastructure and structural mitigation works.

Further, it is conceivable that individual projects designed to combat climate change induced hazards will increase in complexity & expense in proportion to growth in demand for hazard controls and the nature of the hazards. It follows that funding will become a growing challenge that may outstrip present funding rates and the ability of some partners to the program to effectively contribute.

It is recommended that COAG urgently undertake a review of present funding levels and arrangements for the *National Disaster Mitigation Program* with a view to adapting funding levels and mechanisms to suit the nature of the increasing hazard. For example, revenue from commercial carbon permits could form the basis of an enhanced mitigation program fund with any planned transactional taxes on carbon trades being used to maintain all or part of the mitigation program. It is important to note that many public infrastructure and structural hazard mitigation projects take years to design and construct and therefore must be commenced well in advance of the hazard becoming a reality.

#### KEY ACTIONS TO IMPROVE COMMUNITY RESILIENCE

##### General Insurance Industry

- ▶ Provide industry advice and research to governments & the community regarding the observed benefits of improved mitigation, e.g., storm water drainage and flood/levies.
- ▶ Provide industry data and event observations regarding failed or poorly performing mitigation infrastructure that has caused damage to the community.

##### Governments

- ▶ Review current funding and approval mechanisms for Disaster Mitigation works, with a view to expansion of the fund to allow for more rapid implementation of mitigation works in high priority areas.
- ▶ Expansion of the current National Disaster Mitigation Program to include upgrades and repairs to critical stormwater and drainage systems.

##### Individuals & Businesses

- ▶ Implement appropriate mitigation mechanisms on privately owned property in accordance with best practice recommendations from Standards Australia and/or Local Development Guidelines.

#### RISK APPROPRIATE PROPERTY PROTECTION STANDARDS

The Australian community enjoys the undoubted benefit of a universal building code<sup>7</sup> that provides compliance guidance for design and construction. This code is supplemented by a standards regime<sup>8</sup> that is second to none internationally.

Building Codes in Australia, introduced by COAG in 1994, have grown incrementally with community needs, but remain focussed on safety of life as the only fundamental requirement. It is understood that building to a standard that protects life should be considered inviolate and that construction to this standard has an implied level of property protection, typically sufficient to allow life to be preserved during egress.

However, in order to increase community resilience, the hazard resistance of both existing structures and future structures, needs to be increased in order to protect both safety of life and a property owner's financial interest in the asset.



<sup>7</sup> The Building Code of Australia

<sup>8</sup> Australian Standards manifested through Standards Australia

General insurance companies have detailed risk assessment criteria used to develop a risk rating for individual buildings to natural hazards. These risk ratings are used by an insurer in conjunction with knowledge of the natural hazard environment to calculate the relative risk of loss due to a predictable event. Risk ratings are ultimately reflected in the premium attracted by insurance cover for the hazard.

Insurance Council members have contributed to the development of a property protection guide, pooling the industry's best practice knowledge regarding design and construction methodologies that significantly reduce the risk profile of a structure and can be said to have increased the resilience of the building to various natural hazards. Work on this guide is continuing.

Protection of property is in the community's economic and social best interests. It is recommended that built environment resilience, through the expansion of building codes and development of further Australian Standards, should be aggressively pursued by COAG on behalf of the community. It is believed that the best approach would be for COAG to endorse as a principle, the expansion of building codes to address current and future property risk from a property resilience perspective. The CCAC should be charged with developing best practice guidance on predicted hazards for consumption by the Australian Building Codes Board as part of this initiative.

#### **KEY ACTIONS TO IMPROVE COMMUNITY RESILIENCE**

##### General Insurance Industry

- ▶ Provide best practice guidance to property owners and developers regarding risk adaptation and mitigation steps for property facing extreme weather events & climate change impacts.
- ▶ Analyse and deliver pricing incentives for lower risk development involving risk improved property.

##### Governments

- ▶ Expand the Building Code of Australia to incorporate property protection as a fundamental basis for consideration in building design and construction.

##### Individuals & Businesses

- ▶ Property owners or developers - undertake a critical analysis of existing property protection measures available and implement measures that are appropriate to the risks predicted over the lifespan of the property.

## **FINANCIAL RISK MITIGATION IN THE COMMUNITY**

Effective and efficient insurance markets remain a fundamental feature of advanced economies.

The provision of insurance enables economic agents to cost the risk of a given activity and if appropriate, transfer this risk according to their own risk profile.

This profiling of risk enables economies to more flexibly and efficiently allocate resources, thereby encouraging stronger investment/growth leading to higher living standards.

In other words, general insurance serves as an economic enabler, with its contribution to economic growth being:

- The important task of pricing risk and "monetising" risky activity
- Facilitating the allocation of resources across the wider economy.
- Reducing transaction and friction costs as parties seek to transfer risk from the adverse to those more willing to take on risk.
- The ability to support economic development by facilitating activities/investment of a higher risk.
- Reducing the burden on Government/public sector resources in the event of a major event or catastrophe, thereby transferring the cost of recovery from the public to private sector.
- Supporting the principle of mutual obligation and personal responsibility within individuals and communities by encouraging risk adaptation and risk mitigation strategies.

Personal risk offsetting through the adoption of appropriate insurance cover for an individual's significant assets remains the best way for community members to protect themselves against the residual risk (post mitigation) of extreme weather related events.



A resilient community will have a good level of general insurance cover access and availability, allowing individuals recourse to financial re-imbusement should assets and belongings be damaged or lost due to an insurable event.

Communities who do not have adequate levels of insurance will have a greater reliance on government relief and community appeals – ultimately placing an additional burden on the community, the government and ultimately on all tax payers. Personal adoption of financial risk mitigation against future events remains the most cost effective and resilient course of action.

Unfortunately there are obstacles to achieving comprehensive levels of insurance coverage in communities. In May 2007, the Insurance Council released the report *“Non Insurance: Who, Why and Trends”*. This study, undertaken by the Centre for Law and Economics at the Australian National University profiled non insurance in the Australian community.

Using data from the ABS Household Expenditure Survey, the Non Insurance Report found that of Australia’s 7.7 million residential households, some 1.8 million or 23 per cent did not have a building or contents insurance policy. The report also utilised previously unpublished data from the Roy Morgan Single Source Survey (RMSS) to profile the characteristics and demographics of the non insured population of Australia.

### **WHO ARE THE NON-INSURED?**

Non insurance is closely correlated to many demographic variables such as life stage, age, location, education and country of birth. In particular, non insurance tended to be associated with households:

- that were young or at earlier stages of life
- living in cities and in particular localities and regions in cities
- born in non Western societies
- with lower levels of education
- without full time work

The report also found that those households with weaker capacities to protect against loss (ie they have limited financial reserves) were less likely to take out insurance to inoculate themselves against future loss.

### **REDUCING THE NON-INSURANCE RATE IN AUSTRALIA TO HELP INCREASE COMMUNITY RESILIENCE**

The approach taken by the Insurance Council to address non-insurance has been to establish a financial inclusion framework. This framework has as its core components integrating three elements:

- improving the understanding of insurance through financial literacy
- ensuring that regulatory and policy settings support and encourage insurance (such as taxation on insurance)
- ensuring that commercially sustainable supply and product is available to meet the needs of consumers.

### **IMPROVING FINANCIAL LITERACY**

The Insurance Council, in conjunction with a non government partner is committed to the development of an insurance “curricula” for integration with financial literacy programs currently undertaken by non government organisations (NGOs). Research from the Insurance Council has indicated that insurance literacy programs are underdeveloped and that non government organisations welcome strengthening this aspect of their financial literacy efforts.

The Insurance Council has an aspiration that the curricula be developed by mid 2008 with a rollout of the curricula in a financial literacy framework amongst NGOs by the second half of 2008. The underlying goal of the project is to strengthen the capacities of individuals in marginal communities to understand the basic concepts and principles operating in insurance; to see the role that insurance plays in protection of loss; and to better value and price insurance.

## IMPROVING REGULATORY SETTINGS FOR INSURANCE

The Non-Insurance Report<sup>9</sup> commissioned by the Insurance Council concluded that:

- State taxes on building and contents insurance in Australia are significant, varying between 18% and 45% on top of the pre tax premiums.
- Analysis suggests that these state taxes have impacted the take-up of insurance and in doing so, caused deadweight losses to society. The analysis supports the view that demand for contents insurance is more price sensitive than for building insurance.
- Only NSW and Victoria still impose a fire service levy on insurance premiums. The data presented supports the view that this approach to funding the fire services is costly to society. Other jurisdictions have successfully migrated to other more efficient and equitable funding methods. These should be explored by NSW and Victoria. All states should also consider alternatives to stamp duties on insurance.

The Insurance Council commissioned the Australian National University's Dr Richard Tooth to undertake further and more detailed analysis into the elasticity of demand for house and contents insurance.<sup>10</sup>

The elasticity study used econometric analysis to more closely examine the factors that affect demand for house and contents insurance. The report sought to determine:

- The effect of a change in government policies toward state taxes on insurance.
- An estimate a price elasticity of demand<sup>11</sup> for house and contents insurance;
- Other factors that may influence the demand for insurance

The elasticity's for house and contents insurance estimated by Dr Tooth were then used to estimate the additional take up of insurance upon reform of insurance taxes. The predicted additional take up of general insurance following reform of insurance taxes is outlined below.

### Estimated effect of removing premium based taxes on the take-up of contents insurance

Jurisdiction	Households (000s) without contents insurance				
	From 2003/04 survey	Forecast reduction today if			
		FSL were removed		FSL, stamp duties, and IPT were removed	
Estimate	Estimate	Std. Error	Estimate	Std. Error	
New South Wales	795	98.6	(26.9)	130.6	(37.9)
Victoria	491	83.2	(22.7)	109.5	(31.7)
Queensland	441			24.3	(6.7)
South Australia	137			13.6	(3.8)
Western Australia	210			16.3	(4.6)
Tasmania	47			2.6	(0.7)
A.C.T and N.T.	49			3.0	(0.9)
<b>Total</b>	<b>2,170</b>	<b>182</b>	<b>(49)</b>	<b>300</b>	<b>(86)</b>

<sup>9</sup> Insurance Council of Australia (2007) : "The Non Insured: Who, Why and Trends" page 37

<sup>10</sup> Dr Richard Tooth (2007) "An Analysis of the Demand for House and Contents Insurance in Australia" ( A report for the Insurance Council of Australia).

<sup>11</sup> Given the nature of insurance provision, the elasticity estimated is that of the combined effect of supply and demand.



**Estimated effect of removing premium based taxes on the take-up of building insurance**

Jurisdiction	Households (000s) without building insurance (owner occupiers not in body corporate)				
	From 2003/04 survey	Forecast reduction today if			Std. Error
		FSL were removed		FSL, stamp duties, and IPT were removed	
	Estimate	Estimate	Std. Error	Estimate	Std. Error
New South Wales	70	22.8	(11.6)	26.1	(14.3)
Victoria	51	26.4	(13.1)	30.4	(16.0)
Queensland	34			4.8	(2.2)
South Australia	14			3.2	(1.5)
Western Australia	25			3.5	(1.6)
Tasmania	7			0.8	(0.4)
A.C.T. and N.T.	3			0.4	(0.2)
<b>Total</b>	<b>203</b>	<b>49</b>	<b>(25)</b>	<b>69</b>	<b>(36)</b>

As the above tables demonstrate, removing FSL in NSW alone would lead to an additional 100,000 households taking up contents insurance and an additional 22,000 taking up building insurance. Moreover, removing, *all* NSW insurance premium taxes would see an additional 150,000 households taking out additional home and contents insurance.

In the final distillation of this analysis it is clear that the uptake of personal insurance lines remains significantly price sensitive. The taxation of general insurance is a significant deterrent to uptake and must be considered as part of any wider strategy to increase community resilience to extreme weather events. The Insurance Council is engaged on a wide front on the subject of non-insurance.

**PRODUCT SUPPLY**

Continued development and adaptation of insurance products to suit the needs of the community is a critical issue that remains at the core of the competitive nature of the industry. As part of this development process it will be crucial to develop commercially viable products that not only serve consumers well, but maintain a sustainable industry capable of responding to extreme events.

**KEY ACTIONS TO IMPROVE COMMUNITY RESILIENCE**

General Insurance Industry

- ▶ Develop and implement public education and financial literacy programs regarding personal financial risk mitigation.
- ▶ Undertake ongoing product development to cater to non-insured demographics parallel to any increasing demand.
- ▶ Continue insurance product innovation addressing extreme weather risks and rewarding sustainable or 'greener' behaviour that contributes to climate change reversal.
- ▶ Continue to perform catastrophe modelling and development of capitalisation options to maintain a healthy and stable general insurance market.
- ▶ Continue to participate in global management of the insurance market cycle to facilitate availability of competitive & appropriate levels of general insurance in Australia.

Governments

- ▶ Removal of taxes on all general insurance products, thereby encouraging greater adoption of personal financial risk mitigation.

Individuals & Businesses

- ▶ Individuals & businesses in the community implement Business Continuity Planning that incorporates extreme weather initiated damage on essential assets as well as impacts on external resources or markets critically relied upon.
- ▶ Individuals & businesses in the community undertake practical assessment of the risks to assets and seek appropriate cover for those risks.

## COMMUNITY EMERGENCY & RECOVERY PLANNING

Australian governments have undertaken considerable efforts in recent years to improve emergency response and recovery capabilities in Australia. This has involved investment in training and resources at the tactical level (SES, Fire Brigades etc), at the operational level (State Recovery Committees etc) and in many instances at the community level (local government emergency planning and guidance for personal emergency planning).



Both the States and Commonwealth should continue robust development of Tactical Response Capabilities and inter & intra State Coordination Capabilities. Development of these capabilities must keep pace with any observed change in the frequency, intensity and nature of extreme weather events.

It is recommended that the *Australian Emergency Management Committee* adopt a standing agenda item regarding climate change observations and weather impacts, to facilitate discussion about growing needs in the emergency services environment to face new or increased threats.

It is equally important that the general insurance industry maintain pace with advancements in government response arrangements, so that delivery of insurance services 'at the time of greatest need' following an extreme weather event are as efficient as possible. In this context the general insurance industry will maintain a continuous improvement program for the *Industry Catastrophe Coordination Arrangements*, first developed in 2007.

### KEY ACTIONS TO IMPROVE COMMUNITY RESILIENCE

#### General Insurance Industry

- ▶ Ensure that the industry's catastrophe coordination arrangements keep pace with community needs and advancements in State recovery capabilities as climate change forces advancements in emergency response.

#### Governments

- ▶ Continuous best practice review and capability development by Australian emergency response & recovery agencies, as the nature of extreme weather changes and new emergency response and recovery needs emerge.

#### Individuals & Businesses

- ▶ Individuals & Businesses undertake appropriate disaster preparation and recovery planning before any extreme weather event occurs.

## CONCLUSION

Improving community resilience through adaptive measures will allow Australian communities to continue leading a safe and prosperous lifestyle in an environment that is subject to more extreme weather related events.

Resilience however, is a complex matter and it will take considerable time and effort in order to implement even the issues canvassed in this document.

It is a matter for common sense that the community must be prepared well in advance of manifestation of more frequent extreme weather events, particularly where the construction of property is concerned.

It is in this context that action is required on each of these matters, such that communities may find themselves in a confident position into the future with regard to their lifestyle and asset protection.

# IMPROVING COMMUNITY RESILIENCE TO EXTREME WEATHER EVENTS

	GENERAL INSURANCE INDUSTRY ACTIONS	ACTION BY GOVERNMENTS	ACTIONS BY INDIVIDUALS & BUSINESSES
<p><b>1</b> COMMUNITY UNDERSTANDING OF WEATHER-RELATED RISKS</p>	<ul style="list-style-type: none"> <li>▶ Provide industry advice and research to governments and the community regarding the probabilities and costs of extreme weather events.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Develop a concise public education campaign through an appropriate authority regarding specific climate change impacts and changes to extreme weather events for communities on a regional basis.</li> <li>▶ Implement mandatory risk information disclosure and acceptance requirements as part of all State based property transfer regulations for all extant and predicted risks relevant to a property.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Use of the presented education information to make risk appropriate decisions regarding assets and operations as part of an annual risk assessment &amp; management cycle.</li> </ul>
<p><b>2</b> RISK APPROPRIATE LAND USE PLANNING &amp; ZONING</p>	<ul style="list-style-type: none"> <li>▶ Provide industry advice and guidance to governments and the community regarding the risk implications of particular developments and projects under consideration with regard to extreme weather events.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Implement risk appropriate land use planning legislation harmonised across all states to prevent inappropriate development on land subject to inundation, specifically:                             <ul style="list-style-type: none"> <li>▶ no residential or commercial development should occur on land currently subject or predicted to be subject to a 1 in 50yr return period of riverine flooding unless mitigation works have been carried out to maintain a 1 in 100yr risk exposure limit,</li> <li>▶ no residential or commercial development should occur on land currently subject to or predicted to become subject to a 1 in 50yr return period for storm surge unless mitigation works have been carried out to maintain a 1 in 100yr risk exposure limit.</li> </ul> </li> <li>▶ Implement a southerly expansion of cyclone and wind storm related building codes to counter the predicted southerly expansion of severe cyclones.</li> <li>▶ Implement legislation harmonised across all states requiring mandatory disclosure of all known &amp; predicted risk data by state &amp; local governments to property purchasers during property conveyance and title search processes.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Critical assessment of each purchase of new property and the future risks to current property, then implement appropriate adaptive behaviour to lower or avoid the risks.</li> </ul>
<p><b>3</b> RISK APPROPRIATE MITIGATION MEASURES</p>	<ul style="list-style-type: none"> <li>▶ Provide industry advice and research to governments &amp; the community regarding the observed benefits of improved mitigation, e.g., storm water drainage and flood levees.</li> <li>▶ Provide industry data and event observations regarding failed or poorly performing mitigation infrastructure that has caused damage to the community.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Review current funding and approval mechanisms for Disaster Mitigation works, with a view to expansion of the fund to allow for more rapid implementation of mitigation works in high priority areas.</li> <li>▶ Expansion of the current National Disaster Mitigation Program to include upgrades and repairs to critical stormwater and drainage systems.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Implement appropriate mitigation mechanisms on privately owned property in accordance with best practice recommendations from Standards Australia and/or Local Development Guidelines.</li> </ul>
<p><b>4</b> RISK APPROPRIATE PROPERTY PROTECTION STANDARDS</p>	<ul style="list-style-type: none"> <li>▶ Provide best practice guidance to property owners and developers regarding risk adaptation and mitigation steps for property facing extreme weather events &amp; climate change impacts.</li> <li>▶ Analyse and deliver pricing incentives for lower risk development involving risk improved property.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Expansion of the Building Code of Australia to incorporate property protection as a fundamental basis for consideration in building design and construction.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Property owners or developers - undertake a critical analysis of existing property protection measures available and implement measures that are appropriate to the risks predicted over the lifespan of the property.</li> </ul>
<p><b>5</b> FINANCIAL RISK MITIGATION IN THE COMMUNITY</p>	<ul style="list-style-type: none"> <li>▶ Develop and implement public education and financial literacy programs regarding personal financial risk mitigation.</li> <li>▶ Undertake ongoing product development to cater to non-insured demographics parallel to any increasing demand.</li> <li>▶ Continue insurance product innovation addressing extreme weather risks and rewarding sustainable or greener behaviour that contributes to climate change reversal.</li> <li>▶ Continue to perform catastrophe modelling and development of capitalisation options to maintain a healthy and stable general insurance market.</li> <li>▶ Continue to participate in global management of the insurance market cycle to facilitate availability of competitive &amp; appropriate levels of general insurance in Australia.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Removal of taxes on all general insurance products, thereby encouraging greater adoption of personal financial risk mitigation.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Individuals &amp; businesses in the community implement Business Continuity Planning that incorporates extreme weather initiated damage on essential assets as well as impacts on external resources or markets critically relied upon.</li> <li>▶ Individuals &amp; businesses in the community undertake practical assessment of the risks to assets and seek appropriate cover for those risks.</li> </ul>
<p><b>6</b> COMMUNITY EMERGENCY &amp; RECOVERY PLANNING</p>	<ul style="list-style-type: none"> <li>▶ Ensure that the industry's catastrophe coordination arrangements keep pace with community needs and advancements in State recovery capabilities as climate change forces advancements in emergency response.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Continuous best practice review and capability development by Australian emergency response &amp; recovery agencies, as the nature of extreme weather changes and new emergency response and recovery needs emerge.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Individuals &amp; Businesses undertake appropriate disaster preparation and recovery planning before any extreme weather event occurs.</li> </ul>

