

# **Cross-Scale Barriers to Climate Change Adaptation in Local Government, Australia**

## **Background Report**

**31 JANUARY 2012**

**PREPARED FOR:  
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# 1 INTRODUCTION

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Many of the impacts of climate change and variability such as droughts, flooding, storm surges and sea level rise have or will be experienced at the local level; requiring a wide range of local interventions in response (Corfee-Morlot et al., 2009). As a result, local governments in Australia and overseas have initiated plans to adapt to these impacts. As is discussed in Section 2, many initiatives have been put in place to support the development and implementation of these plans. However, the pathway to planning and implementation of adaptation is not a barrier free process. Barriers or constraints manifest themselves from within and externally to the responsible organisation. These can take the form of capacity and financial constraints, competing priorities, planning time horizons are longer than political lives of decision makers, and the absence of overarching legislative frameworks that take climate change into consideration, to mention a few (Mukheibir and Ziervogel, 2007; Smith et al., 2008).

Furthermore, local government is embedded in a larger multi-scale governance context consisting of a range of State and non-State actors influencing the adaptation decision-making space. Moreover, adaptation planning within local government or other vulnerable sectors does not occur in isolation; it is dependent on the extent of adaptation occurring at various spatial scales and within sectors. As Adger et al. (2008, p.340) suggests, this dependency of adaptation decisions on scale and agency may give rise to hidden limits to adaptation in an increasingly complex and inter-connected society. It is thus pertinent to understand and address the critical cross-scale barriers that may limit effective adaptation planning and implementation within local government (Withycombe, 2009; Burch, 2010). Early identification of these barriers can provide incentives for actors, within a given system and who have greater control over a specific barrier(s), to become pro-active in adaptation decision-making and facilitate adaptation within local government. Simultaneously it will support the way lessons and experiences with adaptation within local government feed into planning at higher scales, ensuring local strategies remain relevant and providing a basis for transferring knowledge to other sectors and communities (Corfee-Morlot et al., 2009). For example, the results of a study by Measham et al.(2011) was adopted by a group of Coastal Councils in Sydney to lobby the State government to recognise sea level rise in the planning system, which now enables local government to plan for this particular climatic impact.

In the context of climate adaptation, barriers are defined as “impediments, that can stop, delay or divert the adaptation process which can be overcome with concerted effort, creative management and related shifts in resources use, institutions etc.,” (Moser & Ekstrom 2010, p.2). Scholarship on understanding barriers to adaptation is an emerging research area as various sectors and systems plan and operationalise adaptation. Research to date has identified common barriers to adaptation planning within local government in Australia which include leadership, competing priorities, planning process, information constraints and institutional constraints (Measham et al., 2011). Similar insights are drawn from international studies (Dessai S, Lu X, 2005).

Although these studies have recognised the cross-scale integration and collaboration needs, many of these studies have focused largely on local government itself and internal barriers, rather than understanding the broader multi-governance system and cross-scale barriers that shape adaptation at the local government scale. In response, ISF is undertaking this study to synthesise a set of critical barriers to adaptation planning and implementation by local government in Australia thereby defining the adaptation capacity interventions to move to a climate resilient delivery of local government services. Specifically, the study aims to address the following objectives:

- a) Identify the mechanisms to cope with climate variability at the local government level which provide a proxy to identify limitations to respond to climate change impacts
- b) Identify the underlying processes and structures that give rise to these barriers, for example, how the actors and the context of the system contribute to the barriers?
- c) Suggest options of how barriers will be overcome through end-user engagement, thereby defining the adaptation capacity interventions to move to a climate resilient delivery of local government services

In the sections that follow a synthesis of common barriers to adaptation within the local government context is provided in Section 3, Section 4 introduces the theoretical and conceptual framework to be adopted in the study, drawing on multi-level governance approaches. Section 2 which follows, presents a background of the regulatory context as well as the types of adaptation funds/programmes that have supported local government in adaptation planning to date in Australia.

## **2 UNDERSTANDING THE CLIMATE CHANGE ADAPTATION CONTEXT**

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### **2.1 LOCAL GOVERNMENT CLIMATE CHANGE ADAPTATION LEGAL FRAMEWORK**

“Local government provides for the health, safety and welfare of its community and if a council cannot show that it has taken preventative action against any threat to the health, safety and welfare of its community, it faces the possibility of liability costs – costs which can be reduced if a council identifies the threats to its community and implements appropriate strategies to prevent these threats” (Local Government Association of Tasmania, 2004).

This section provides a brief overview of the legal and regulatory framework relevant to local government and the issue of climate change adaptation (CCA). National, state and local scale laws, policies and plans associated with adaptation are presented below.

#### **2.1.1 NATIONAL LEVEL**

At the national level, the Council of Australian Governments’ (COAG) National Climate Change Adaptation Framework of 2007 is Australia’s main policy vehicle for a collaborative approach across different levels of government to climate change adaptation. It aims to set a national agenda for an approach to long-term adaptation to climate change (COAG, 2007). Despite this seemingly overarching framework for CCA, there are additional elements that form part of the national picture for CCA, as highlighted in Table 3. Numerous guiding documents, research, sectoral strategies, risk management approaches and legislation and policies exist, contributing to a somewhat crowded and confusing landscape.

## 2.1.2 STATE LEVEL

There is currently no overarching policy at the State level in any jurisdiction in Australia that guides adaptation. COAG's National Climate Change Adaptation Framework includes mention of a Planning Ministers Council; however this was abolished in 2010. Despite the lack of a coordinated State level guiding framework, all states and territories have begun creating or amending laws, policies and action plans to account for CCA. Victoria, Tasmania, South Australia and ACT have specific climate change legislation (some relate to mitigation), while other states and the NT have developed targeted policies and guidelines to begin to steer policy in the direction of mainstreaming CCA considerations into various sectoral decision making. For example, Queensland 2011 *Issues Paper* on Climate Change notes: "The Queensland Government is also working to ensure that all relevant state planning instruments and land use plans take account of climate change impacts such as increased intensity of floods, fires, storms and heat waves" (DERM, 2011, p.18).

State planning authorities have increasingly been legally challenged for failing to address climate change considerations since 2005. For example, the NSW Land and Environment Court ruling against the state government which failed to consider future flood risk in approving a residential subdivision at Sandon Point in Wollongong (Gurran et al., 2008).

At the state level, civil liability legislation may also be relevant in cases of exposure of public authorities. This is relevant in all state and territory jurisdictions except the Northern Territory (England and McDonald, 2007).

- Civil Law (Wrongs) Act 2002 (ACT);
- Civil Liability Act 2002 (NSW);
- Civil Liabilities Act 2004 (Qld);
- Civil Liability Act 2003 (SA);
- Civil Liability Act 2002 (Tas);
- Wrongs Act 1958 (Vic);
- Civil Liability Act 2002 (WA).

## 2.1.3 LOCAL LEVEL

At the local level, the Local Government Act is the principal statute governing councils in each state and territory (see Appendix A) (DCCEE, 2010). From a legal perspective, local governments may be found liable with regard to climate change in the following ways (Barnes et al., 2009):

- Forecast increase in claims in the area of property damage (physical damage to Council owned buildings, infrastructure and assets);
- Professional indemnity (management of the development and building approvals, issuing of certificates, verbal advice);
- Corporate Governance and
- Failure to implement legislation, financial responsibility, strategic planning.

Furthermore, the federal government's Department of Climate Change and Energy Efficiency (DCCEE) notes that for local government, climate change related liability may arise with *compensation* and *common law negligence due to a breach of the duty of care* (Planning Institute of Australia, 2004). Given the ongoing publicly available information regarding potential climate change impacts, it is also difficult for local governments to claim ignorance on the risks of climate change (Climate Risk, 2009).

The Australian Local Government Association notes the impacts of climate change on local government are wide and varied and include:

- Planning policy and development assessment

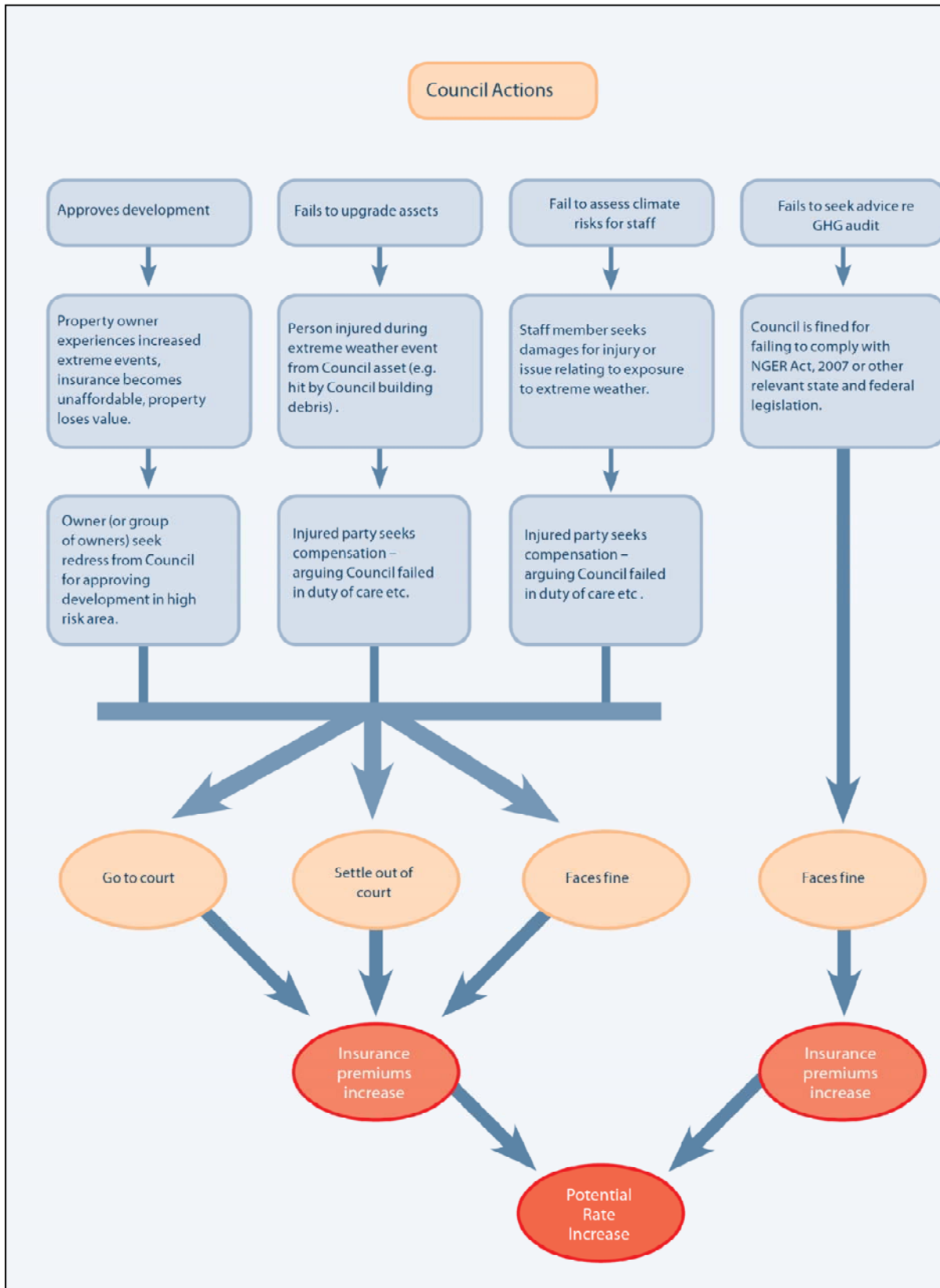
- Litigation
- Coastal infrastructure
- Economic Development and Tourism
- Social and community planning
- Provision and use of recreational facilities
- Maintenance of recreational facilities
- Health services; Community/workplace health
- Emergency/bushfire management
- Agriculture/biosecurity
- Natural resource management/coastal management
- Weed/pest management
- Biodiversity Protection
- Water and sewerage services
- Stormwater and drainage
- Wastewater
- Water supply (see Pillora, 2010 for details)

Due to these wide ranging impacts, local government's obligations to respond to climate change are complex and may even be "shared, implemented or defined by other agencies and authorities in other levels of government" (DCCEE 2010, p.13). Relationships between local and state / territory government can also differ depending on the particular local government function being considered, and the locality of the local government (DCCEE, 2010). Over the past several years, legislative reforms have increased the flexibility of councils to respond to the needs of their local areas, and allowed them to take up CCA activities within their jurisdiction (DCCEE, 2010). For example, the introduction of the NSW Sea level Rise Policy Statement 2009. Potential outcomes to a council as a result of climate change are provided in Figure 1. Specific attempts by local councils' to address climate change issues include the NSW Byron Shire Council which developed a "planned retreat" policy. In Victoria, the Wellington Shire Council has developed a Planning Scheme to impose minimum floor levels for buildings based on the level of a 1 in 100 year flood, while in Adelaide, the Planning Strategy for Greater Adelaide, includes strategies for climate change adaptation (Productivity Commission, 2011). Clarence Valley Council which is located in northern NSW adopted a Climate Change Policy in 2010. The policy objectives state Council's responsibility to adapt both at the Council level and to assist the community in adaptation actions. The Climate Change Policy also requires Council to "develop a Climate Change Action Plan for Council's activities which includes climate change mitigation and adaptation strategies for Council..."; and "encourage all sectors of the Clarence Valley community to adapt to the unavoidable impacts of climate change..." (Clarence Valley Council, 2010).

There is much activity occurring at the local scale regarding adaptation planning, with local governments beginning to incorporate more systematic and specific actions into their approaches to CCA. This comes despite a complex and seemingly confusing legislative landscape that differs over state and territory borders. While COAG's National Climate Change Adaptation Framework provides general guidance, Australia currently lacks a strategic approach on which policy makers can base their adaptation planning on. The result is therefore a fragmented approach to adaptation planning that is not supported by legal basis for action.



**Figure 1: Possible legal actions relevant to councils. (Climate Risk, 2009, p. 36).**



## 2.2 KEY INITIATIVES SUPPORTING ADAPTATION BY LOCAL GOVERNMENT IN AUSTRALIA

Climate change impacts are often most acutely felt at the local level. As a result, many local government initiatives have emerged in recent years, some driven from the national level, other state and community driven. This document provides a brief overview of the current programs, projects and initiatives undertaken at the local government level in Australia.

### 2.2.1 NATIONAL INITIATIVES FOR LOCAL GOVERNMENT CLIMATE CHANGE ADAPTATION

#### *a) Insurance against climate impacts*

Public liability and professional indemnity insurance is taken out by every state and territory local government, with various degrees of cover, and is a legislative requirement in the states of New South Wales, Queensland, South Australia and Victoria (ALGA, 2011). State-wide mutual liability schemes are available to councils in each state, offering affordable cover for most council needs, however a few councils have additional cover for major incidents (ALGA, 2011). See Appendix B for each states mutual liability insurance details.

No state or territory legislates for local governments to insure council infrastructure or 'real property,' which refers to roads, culverts, buildings, recreational facilities and treatment facilities (ALGA, 2011). While some level of cover exists for real property, most council infrastructure is uninsured and no council insures roads, in fact, insurance of this type is unavailable in the Australian market (ALGA, 2011).

The UK and Australia both report approximately 40% of local governments having completed risk assessments (UK Adaptation Sub-Committee, 2010). The difference between the two is that the UK has a legal framework for climate change adaptation (UK Adaptation Sub-Committee, 2010) which has not yet been developed in Australia. The Insurance Council of Australia (ICA) has developed a National Flood Information Database (NFID) with the aim to provide information on flood risk for all properties across Australia. This will allow decision makers and individuals assess their risk of flood. The ICA is also developing a national flood mapping tool<sup>1</sup> for communities and local governments to better understand their risks of flood, and therefore plan better in the face of climate change (IAG, 2011).

#### *b) Local Adaptation Pathways Program (LAPP)*

This federal government funded program assists local government prepare for climate change adaptation by providing funds for protection of communities, the local economy and built and natural environments (DCCEE, 2011). Over 90 local councils' across Australia (60 coastal and urban councils in round 1 and 30 rural remote councils in round 2) have participated in the LAPP initiative, which provides funds to begin assessing potential risks associated with impacts of climate change, and to formulate adaptation actions. Examples of LAPP initiatives are provided below<sup>2</sup>:

- **Preparing for Climate Change – A Regional Approach by Kempsey, Nambucca and Bellingen Shires (NSW):** This council consortium recognised the potential

<sup>1</sup> See also <http://www.lgsa-plus.net.au/www/html/1869-risk-management.asp>

<sup>2</sup> See <http://www.climatechange.gov.au/government/initiatives/lapp.aspx>

economic, social and environmental impacts of climate change in their region and was successful in securing funds for a risk assessment and development of a CCA Strategy.

- **Sunshine Regional Council (Qld) Climate Change Risk Assessment and Action Plan:** Round one funds were provided to identify climate change risks to controlled infrastructure with respect to construction, operation and maintenance and to develop a strategy based on the risk assessment.
- **Shire of Broome (WA) —Integration of climate change into Shire of Broome's Risk Management Strategy:** Funds were provided to assist council integrate climate change risk assessment into decision making processes at the broader level.
- **East Arnhem Shire Council, West Arnhem Shire Council, and Tiwi Islands Shire Council (NT):** This round two project addresses issues relating to indigenous vulnerability to climate change stemming from the close relationship with natural resources.

### c) *The Climate Change Adaptation Skills Grants Program and Risk Management*

Funded by the former Australian Greenhouse Office (AGO), this initiative provided local governments (or professional organisations) grants of up to \$30,000 for risk management processes and \$20,000 for climate change action plans. It was later replaced by the LAPP initiative for local governments and the “Climate Change Adaptation Skills for Professionals Program”.

### d) *Local Government Planning Instruments*

As noted in Insurance Australia Group (IAG)s’ recent submission to the Productivity Commission’s inquiry into barriers to adaptation: “Higher quality planning standards must be required of local government, to ensure no further development is allowed in areas of unacceptable risk. In addition, existing owners of property in high risk areas should be provided with incentives to relocate to areas with less risk” (IAG, 2011:10). It is also noted that such planning instruments can take a long time to modify (Gurran et al, 2008). An example of an early leader, Byron Shire Council in NSW took the initiative in 2007 to include specific climate change parameters for temperature increases and sea level rise in its Strategic Planning and Climate Change Report (Gurran et al., 2008). Climate change planning scenarios are required in relevant plans including infrastructure, land use planning, and development assessment.

### e) *Local Governments for Sustainability (ICLEI)*

ICLEI is a global not-for-profit organisation comprising local governments’ and local government organisations’ committed to sustainable development. The Oceania branch of ICLEI, based in Melbourne, is active across many climate change related programs, including:

*Cities for Climate Protection - Integrated Action (CCP-IA)*<sup>3</sup>, which builds capacity within local government on climate change actions. The previous “Adaptive and Resilient Communities Program” was amalgamated under the CCP-IA initiative, and is now renamed CCP-Adapt, and includes developing adaptation goals, documenting assumptions and brainstorming options. CCP-Adapt is a two-year program offering support in assessing and managing climate change risks and opportunities via a six staged process (ICLEI, 2010).

<sup>3</sup> See more on CCP-Adapt: <http://www.iclei.org/index.php?id=11344>

ICLEI's former Cities for Climate Protection program focused on climate change mitigation and was successful in engaging many councils across Australia in aiming to reduce their greenhouse gas emissions.

#### **f) ACELG Activities**

The Australian Centre of Excellence for Local Government (ACELG) works with local governments in enhancing professionalism and skills and showcasing innovation and best practice, including in the area of CCA. For example, in 2011 ACELG hosted a Climate Change Roundtable (assisted by NCCARF) to:

- Build a common understanding amongst leading local government researchers about 'where councils are at' in terms of both adaptation and mitigation
- Explore gaps in research and policy support available to the local government sector - especially smaller councils
- Identify specific actions that can be taken by the ACELG and NCAARF networks and partners.

Participants were local council representatives, regional organisations, local government associations, federal government representatives and academics and scientists who came together to further progress action on CCA at the local government level.

ACELG are also active in publishing materials on CCA for a local government audience. Research papers can be found in ACELG (2011).

An additional source of information specifically aimed at local government audience on CCA in the Information and Knowledge Exchange Network website (<http://www.iken.net.au/>) where case studies, experiences and innovations from across Australia are shared among local government professionals.

#### **g) Research and guidance materials**

In addition to ACELG's research and guidance materials, there is a growing body of literature and research aimed at assisting local government in adaptation planning and implementation. The 2006 "Climate Change Impacts and Risk Management Guide" (see AGO, 2006), published by the Australian Greenhouse Office was a first consolidated reference for local governments to draw upon. Since then, the Department of Climate Change and Energy Efficiency (DCCEE) released its "Climate Change Adaptation Actions for Local Government" report (see DCCEE 2010), which extends and builds upon the 2006 document, further acknowledging the importance of local action and the agency of local government in developing appropriate responses.

Vulnerability or risk assessments are becoming increasingly common within local governments, sometimes as part of the LAPP program. Risk assessments are often informed by specific guidelines, namely the AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines, which supersede the former AS/NZS 4360:2004 Guidelines (see SAI Global, 2009). These generic guidelines on risk management provide the basis upon which local governments can ensure a robust approach and process to follow in addressing risks, including those associated with climate change, in their local areas.

## 2.2.2 CCA INITIATIVES IN NSW LOCAL GOVERNMENT

Based on surveys conducted by NSW LGSA in 2006 and 2010, much progress in adapting to climate change in the local government sector has occurred in recent years. Approaches drawn upon by NSW local government in action planning for CCA include:

- Inclusion in State of the Environment reporting
- Successful grant applications
- Policies (development and integration)
- Management plans
- Workshops
- Broad stakeholder collaboration
- Climate change community advisory committees
- Sophisticated community engagement programs
- Demonstration projects (Lovesey, 2010)

Additionally and as noted earlier, in 2010, 40% of councils had completed a climate change risk assessment, which is often undertaken with the Local Government Self Insurance Scheme (Lovesey, 2010 and see Appendix B for each state's details). In another local government survey conducted in 2009-2010, 82% of respondents noted they were planning for climate change – with coastal councils more likely to be taking action than inland councils (DECCW, 2010). Specific approaches to addressing climate change in NSW are provided below.

### *a) NSW LGSA Climate Change Workshop Package*

Funded by the NSW Environmental Trust, this package allows councils to develop a risk based approach to planning a climate change response (Lovesey, 2010). The Workshop Package is based on guidelines from the federal government, including Climate Change Impacts and Risk Management: A Guide for Business and Government (Australian Greenhouse Office, 2006) and also follows the International Standard for Risk Management ISO 3100:2009 Risk Management – Principles and Guidelines (Lovesey, 2010). Technical guidance, risk assessment tools, presentations and templates are provided in a modular format, and councils adapt the package to suit their individual needs (Lovesey, 2010).

### *b) Statewide Mutual Climate Risk Assessment Program*

Statewide Mutual is NSW's liability and property mutual for 151 local governments. Statewide is cognisant of the potential impacts climate change may have on its business, and thus engaged Echelon Australia (a risk consulting company) to undertake climate change risk assessments. The aim was to explore the potential insured exposures of local governments regarding their actions or inactions to the impacts of climate change relating in particular to personal injury, damage to property and financial loss (Broom, 2010). The program's risk assessment approach aimed to:

1. Identify & prioritise areas of risk exposure; and
2. Evaluate & prepare Adaptation Plans; and
3. Implement time-framed Adaptation Actions (Broom, 2010)

By completing the above steps, Statewide believes it has taken reasonable precautions to prevent personal injury, damage to property and financial loss (Broom, 2010).

### c) *NSW Mayors Agreement on Climate Change*

Following a motion passed by Waverley Council in 2007, NSW local government mayors are invited to join the Mayors Agreement on Climate Change. As noted by the NSW LGSA, “By signing the agreement, Mayors will agree to meet or beat greenhouse reduction targets assigned to Australia by the Kyoto Protocol or go further and adopt a more ambitious target (such as a 30% reduction or more) for greenhouse gas emissions by 2020” (NSW LGSA, 2011).

## 3 COMMON BARRIERS TO LOCAL GOVERNMENT ADAPTATION

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Identifying barriers or constraints to adaptation is an important process in supporting successful adaptation planning, particularly where reworking the path dependent institutional structures, organizational cultures and policy making procedures is required (Burch, 2010). Many of these barriers will be overcome through incremental change and thus the institutionalisation of processes to facilitate change must occur early on in the adaptation process. Table 1 (at the end of this section) synthesises common barriers to local government adaptation in Australia and other developed nations and have been clustered into common thematic groups according to their association.

### 3.1 AUSTRALIAN EXPERIENCE

In Australia various academic and government bodies have examined barriers to adaptation by local government through in-depth case studies and consultation with diverse stakeholders involved in adaptation planning (Smith et al., 2008; Measham et al., 2011). These contribute to a greater understanding of the contextual barriers that confront local government. General consensus prevails in the literature in relation to adaptation by local government being a ‘shared responsibility’ which must be supported through collaborative efforts across the three levels of Government (i.e., local, State and Federal) (Withycombe, 2009). It also asserts that key barriers stem from the State and Federal policy environment in which local government operates; for example there is poor clarity around the role of local government in addressing climate change (ibid). Pillora (2010) highlights that consistency between policies of different departments within a jurisdiction is crucial. In adopting a systems approach to understanding barriers within Coastal Councils in Sydney, Australia, Smith et al. (2008) argue that the diversity of networks and the complexity of existing governance arrangements hinder attempts to draw clear lines of responsibility and limits the freedom-of-movement of individual organisations. The same study also asserts that the institutional context stemming from higher levels of government is a significant barrier (Measham et al., 2011). This was particularly the case for land use planning frameworks which assumed a stable climate and thus, precluded attempts to incorporate adaptation into local government planning (ibid).

A detailed study of adaptation for coastal cities and infrastructures in Australia also highlights barriers that are relevant to adaptation planning by local government who are responsible for the day-to-day management of many of the policies and building codes related to coastal management (Department of Climate Change, 2009). The study highlights the absence of effective mechanisms for cross-scale coordination of adaptation planning within the coastal zones. Additionally, it identifies the lack of technical and human resource capacity,

specifically at the local government scale to mainstream adaptation strategies that increase the resilience of the coastal zone. Mustelin (2011) examines constraints and challenges to adaptation planning in South East Queensland and concludes that adaptation policy and practice is messy and is shaped by different perceptions of risks and variable commitments to participatory processes of policy-making. The Local Government Shires Association of New South Wales (NSW) examined the specific needs of Councils in NSW in adapting to climate change (LGSA, 2010). The study identifies a set of barriers common to Councils in NSW which have the potential to curtail effective action; competing priorities within Council's diverse portfolio responsibilities was the most significant barrier followed by limited availability of internal and external funding and limited staff capacity. However, many of these barriers are likely to be more significant in smaller and more isolated Local Councils, in comparison to larger urban Councils (Pillora et al., 2009; Pillora, 2010).

This experience is not too dissimilar to the international experience (Mukheibir & Ziervogel, 2007; Ford, et al., 2011; Moser & Ekstrom, 2010), as discussed in the next section.

### 3.2 INTERNATIONAL EXPERIENCE

Studies related to barriers from other developed nations also glean similar insights. The three main barriers frequently cited in the adaptation literature include lack of information, lack of resources and insitutional limitation (Measham et al., 2011). Ford et al.(2011), in a systematic review of adaptation planning initiatives in developed countries, found that it was at the municipal level of government that adaptation was frequently implemented and where barriers were widely noted. They concluded that institutional challenges present the most significant barriers, often taking considerable time to overcome whilst a lack of political will, particularly at the local level, to address climate change impacts was also of concern.

Burch (2010) in their study of barriers to adaptation planning within three Canadian Councils concluded that effective adaptation planning is less a reflection of additional resources (e.g., technical, financial, human resources) but rather a need for greater *facilitation* through re-working interconnected structures/processes such as institutional structures, policy making procedures and organisational cultures. Funfgeld (2010) advocates for a multi-level governance framework to support adaptation in cities in which clarity related to the role of the cities prevail, the regulatory context is set and adequate financing processes for adaptation is provided.

Biesbroek (2010) reviewed the National Adaptation Strategies of seven European Union Member Countries and identified various constraints to national adaptation planning across scales and sectors. The main cross-scale barriers they identified include the lack of co-ordination between administrative levels, unclear division of responsibilities, cross-level and cross-sectoral conflicts and lack of resources. To encourage participatory planning they highlight how the Netherlands's national adaptation programme has been set up where national, provincial and municipal representatives together with representatives from water boards and experts regularly discuss the multi-level dimension of adaptation issues.

Moser & Ekstrom (2010) synthesised a set of cross-cutting barriers found for each stage of the adaptation process (ie., from understanding, planning to implementation). These include leadership, resources, communication and information about the problem, solution and their implications and the deeply held values and beliefs that shape how people perceive, interpret and think about climatic risks and their management. They concluded by asserting that the degree to which they appear in each stage of the adaptation process is dependent on contextual features but highlight that they have been posed as significant barriers in every documented case of adaptation (ibid). In a review of challenges arising in adaptation

planning in urban areas in both developing and developed countries, Sanchez-Rodriguez (2009) highlights the importance of political leadership. However, he concludes that leadership can come from other areas such as academic institutions and international funding agencies.

The above cases collectively highlight that common barriers to adaptation planning exist in Australia and other developed nations. Many of these barriers are likely to be shaped by processes and actors working at scales outside of local government. The literature suggests that the most frequent cross-scale barriers that are experienced relate to policy and governance arrangements, followed by operational barriers that often arise within local government but may be driven by deeper external processes. Financial and behavioural barriers are also present and are likely to influence the degree to which other barriers manifest in the broader multi-level governance system.

**Table 1: Synthesis of common barriers to adaptation planning and implementation by local government**

Operational	Policy	Financial	Cognitive & Cultural
<ul style="list-style-type: none"> <li>▪ Constraints to integrating information about hazard exposure and vulnerability into local planning processes and development agendas</li> <li>▪ Limited knowledge and technical capacity to assess and reduce climate risk.</li> <li>▪ Limited access to information that is scientific, local government specific and at a local scale as well as maps and models for communication and to inform decision making</li> <li>▪ Limited capacity and resources within Councils for adaptation planning</li> </ul>	<ul style="list-style-type: none"> <li>▪ Lack of suitable governance framework for climate risk management in cities</li> <li>▪ The complexity of institutional and inter-jurisdictional arrangements hinder early consideration of risks from climate change</li> <li>▪ Lack of a national mechanism for collaboration</li> <li>▪ Historical decisions (i.e., development decisions, land use zoning)</li> <li>▪ General lack of policy support and directions from other Government departments</li> <li>▪ Legal uncertainty &amp; challenges</li> <li>▪ Leadership and commitment from the State and Federal Government</li> <li>▪ Lack of consistency between policies of different departments within a jurisdiction</li> <li>▪ Short –term political view/agendas</li> </ul>	<ul style="list-style-type: none"> <li>▪ Limited funding/ resources from state &amp; territory government for climate change action, particularly to fund additional staff to lead climate change initiatives within council</li> <li>▪ Competing priorities for funding</li> </ul>	<ul style="list-style-type: none"> <li>▪ Community preferences</li> <li>▪ Behavioural barriers</li> <li>▪ Lack of social cohesion</li> <li>▪ Reluctance to change/accept new technology</li> <li>▪ Community awareness &amp; perceptions</li> <li>▪ Values and beliefs</li> </ul>



## 4 THEORY AND CONCEPTUAL FRAMEWORK

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### 4.1 MULTI-LEVEL GOVERNANCE FOR SUPPORTING ADAPTATION WITHIN LOCAL GOVERNMENT

“There is no point in treating cross-scale interactions amongst scale-dependent regimes as a kind of pathology to be cured. But we can and should make a concerted effort to improve our understanding of this phenomenon and to prepare in advance to take advantage of transient opportunities to restructure existing patterns of cross-level, scale dependent interactions” (Cash et al. 2004, p.7)

Socio-institutional barriers to adaptation planning and implementation (e.g, regulatory structures and social norms associated with the rules in use) often arise through the larger governance context in which the system of focus is embedded (Adger, Arnell, et al., 2005). This is largely because planned adaptation is a collective process, and is contingent on the interaction of organisations, together with formal and informal institutions<sup>4</sup>, at various spatial scales. Smith et al.(2008) suggest that overcoming resource limitations for adaptation within the coastal Councils group in Sydney depend on greater support by higher levels of government and policies that provide Councils’ the freedom-of-movement. Adger (2001, p.924) argues that “the diversity of impacts of climate change means that the most appropriate adaptation responses will often be multi-level responses.” Theories from multi-level governance are used to describe the management of collective issues, the various stakeholders involved and the processes used to influence adaptation actions and outcomes (van de Meene et al., 2011). It emphasises the significance of cross-scale (both horizontal and vertical) interactions among structures and processes across multiple spatial scales. Multi-level governance literature which has its roots in the political sciences was developed to capture the networked and multi-scale jurisdictional nature of policy making and demonstrate that the outcomes at the local level are shaped by institutions at multiple levels (Smith, 2007; Bisaro et al., 2010). The approach also reveals how incentives and interests of actors at various scales interact, the direct costs and benefits of actions, including co-benefits and the who the winners and losers may be of particular policy choices (Corfee-Morlot et al., 2009).

In examining environmental change issues, the multi-level governance approach has shown its utility in understanding the coupled nature of socio-ecological systems and the cross-scale interactions that dominate, separate, build trust and influence relationships between actors<sup>5</sup> operating at different scales (Adger, Brown, et al., 2005; Cash et al., 2006; Bisaro et al., 2010). These studies have also demonstrated the limitations to managing cross-scale interactions; minimising disturbances at one scale may come at the expense of increased vulnerability to disturbances at another scale (Schoon et al., 2011). The effectiveness of how multi-level governance issues are handled in a particular sector is a reflection of the strength of interests and power of the actors who define the problem (Adger, Arnell, et al., 2005). It may thus be helpful to examine the ways in which actors across various spatial scales use specific knowledge to create unequal power relationships and pursue political agendas that influence a specific organisation’s access to crucial resources giving rise to differential capacity to implement adaptation. Power here refers to the capacity to influence outcomes, with or without the legitimacy to do so and can be visible or invisible (e.g., exclusion from

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<sup>4</sup> “Institutions do not include the material entities that are referred to as organisations/agencies. Instead it refers to the formal (e.g. laws) and informal (e.g. norms) rules and decision making practices that determine the behaviour and roles of actors” (Pahl-Wostl, 2007).

<sup>5</sup> Actors refer to the individual, organisations and networks that participate in climate adaptation decisions making.

decision making via government policies) (VeneKlasen and Miller, 2002; Biermann et al., 2010).

Cash et al. (2006) define *scale* as “the spatial, temporal, quantitative or analytical dimensions used to measure and study any phenomenon whilst *levels* are the units of analysis located at different positions on a scale.” Cross-scale refers to the vertical interactions across different scales (e.g., between international, national and local jurisdictions) whilst cross-level reflects the horizontal interactions among levels within a scale (e.g., Local Councils interacting with a body representing the interests of a conglomerate of Councils such as the Regional Organisation of Councils) (Bisaro et al., 2010). This is complemented by an analysis of the temporal dimension of how historical transitions have precipitated shifts in processes that give rise to barriers. Bosomworth & Handmer (2008, p.6) suggest the significance of trust to horizontal and vertical connections which is likely to encourage collaboration and assist public policy actors to learn from one another. Scales are dynamic with a history attached, they are constructed and may be destroyed or transformed through social and political practices and struggles (Zimmerer and Basset, 2003; Passi, 2004). Thus scale issues are often linked with political issues in which different actors strengthen or weaken cross-scale linkages to further their own interests. For example, Preston et al. (2008) comment on the complex top-down governance arrangements that prevail in Australia which limits the entitlements of local government in relation to planning and risk management reforms.

Various studies have identified components that characterise multi-level governance and these are often centred around actors, processes, structures and influences (Kjaer, 2004; van de Meene et al., 2011). “Actors use processes to modify structures which in turn influence the strategies or actions available to actors” (van der Brugge (2009) in S. van de Meene, Brown, et al., 2011, p.1119). Bisaro, Hinkel & Kranz (2010) suggest structural features that can help determine the effectiveness<sup>6</sup> of cross-scale interactions of multi-level governance for climate adaptation research. These include decision-making authority (degree of decentralisation), information management (plurality of information sources) and dominant discourses (plurality of user interests).

Perspectives from Earth System Governance frameworks which aim to understand the complex relations between global transformations of social and natural systems also illuminate key characteristics to consider when analysing multi-level governance (Biermann et al., 2010). This framework is centred around five research problem areas which include: the *architecture* of earth system governance, *agency* beyond the state, the *adaptiveness* of governance mechanisms and processes and their *accountability* and legitimacy and of the modes of *allocation and access* in governance. In relation to this study, questions that may guide the analysis are outlined in Table 2. Additionally the perspective draws attention to the need to consider issues of power, norms, scale and knowledge which cuts across the five problem areas.

The multi-level governance approach to adaptation planning supports institutional arrangement that facilitates cross-scale coordination and enhances flexibility. Adopting such an approach requires attention to spatial and temporal scales and considerations of the dialectical relations between processes occurring within and between local and other scales and how these processes have been structured over time. Understanding how local government and other agencies utilise their agency to access resources and pursue various adaptation strategies to overcome existing barriers is also relevant. The significance of the interactions between actors, processes, structures and influences is also noted in which the role of power of actors operating at different scales must be recognised.

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<sup>6</sup> Effective refers to the “ability of actors to negotiate goals and to achieve them and to translate this into action” (Pahl-Wostl, 2009).

**Table 2: Key problem areas of Earth System Governance perspectives (Biermann et al. 2010, p.281)**

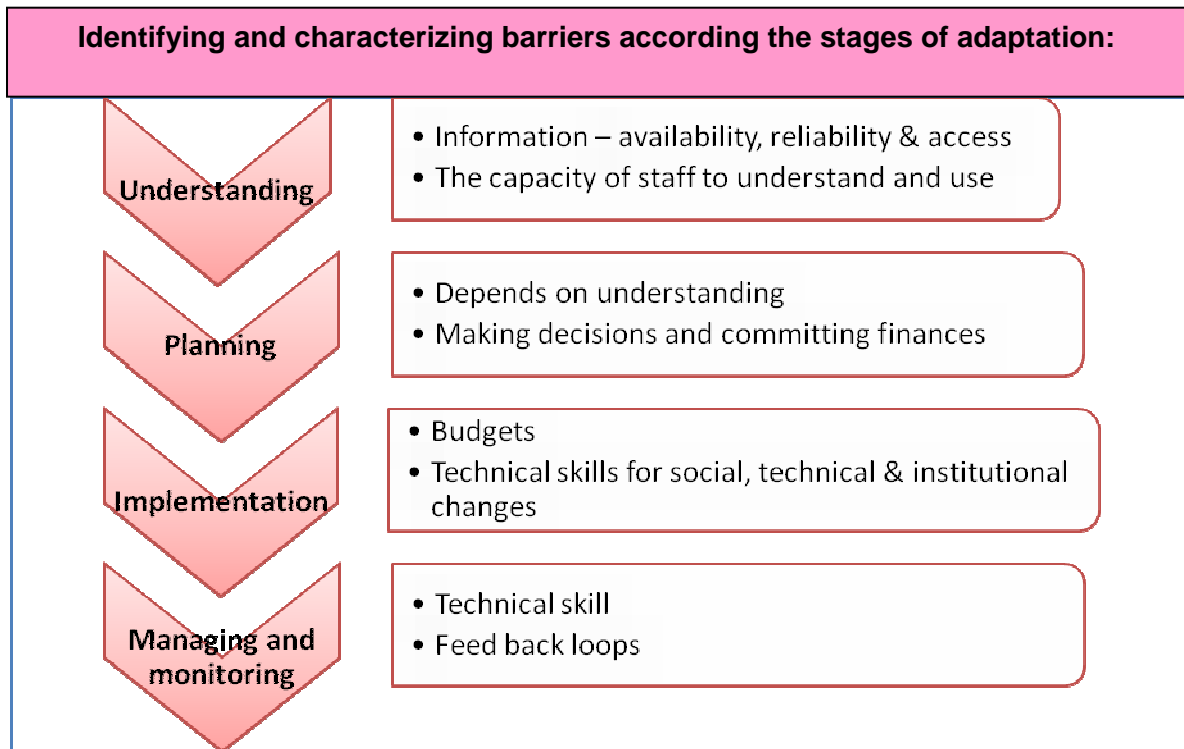
<b>Problem areas</b>	<b>Guiding questions</b>
Architecture	-How is the performance of climate adaptation institutions affected by them being embedded in larger architectures? - The extent of vertical institutional interaction and the role of institutions within multi-layered institutional systems?
Agency	Who are the key actors that exercise agency in the multi-governance space and how are they related to one another? - How is power and authority configured in the multi-governance arrangements
Adaptiveness	What attributes of the multi-governance system enhance capacities to adapt? -Who benefits from adaptation, to what and with which side effects?
Accountability and legitimacy	-How can mechanisms of transparency ensure accountable and legitimate multi-governance system? - What institutional designs can produce the accountability and legitimacy of multi-governance systems in which different interests and perspectives are balanced?
Allocation and access	- What contextual factors enhance the strengths and reduce the weaknesses of principles of allocation and access and under what circumstances can instruments that provide for fair allocation and access be scales up and down?

## 4.2 A DIAGNOSTIC FRAMEWORK FOR IDENTIFYING BARRIERS TO ADAPTATION

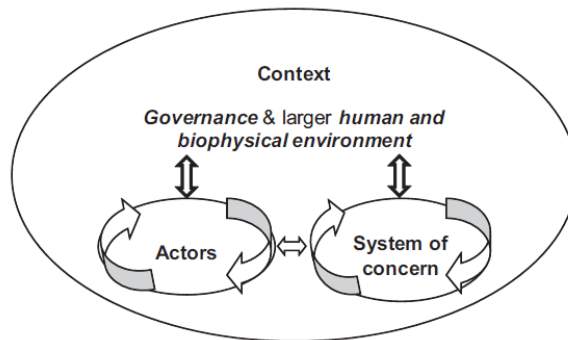
Limited research exists related to frameworks for characterising barriers and understanding complexity in which adaptation decision-making occurs. Rather, the literature to date has largely focussed on characterising barriers according to their types such as generic or specific or their nature (e.g. operational, policy, financial and cultural) and the degree of their severity (e.g., high, medium or low) (Arnell and Charlton, 2001; Yemen NAPA, 2006; URS, 2010). The work by Moser and Ekstrom (2010) provides a useful diagnostic framework for characterising and organising barriers at different phases of the adaptation process across space and time and locates possible points of intervention to overcome a given barrier. Moreover, it questions how best to support adaptation at all levels of decision-making; and thereby improve the allocation of resources and strategically design processes to address the barriers. The framework draws on theories of coupled socio-ecological systems thinking as well as multi-level governance theories enabling a flexible approach to examining barriers (Gunderson and Holling, 2002; Cash et al., 2006). Additionally it supports the theoretical framework proposed in this paper, allowing for an understanding of the key underlying processes and structures that give rise to barriers.

The framework comprises three key phases (Moser & Ekstrom 2010, p.2) and is outlined in Figure 2.

**Figure 2: Conceptual framework for examining cross-scale barriers (adapted from Moser & Ekstrom 2010)**



↓ Influenced by the broader context



↓ Locating points of intervention

**Points of intervention**

		Temporal	
		Contemporary	Legacy
Spatial/Jurisdictional	Proximate	A	C
	Remote	B	D

In summary, the phases can be described as follows (Moser & Ekstrom 2010, p.2):

**Phase 1: Process of Adaptation**

This phase organises the barriers according to the three common process phases of adaptation which include: understanding the problem, planning adaptation actions and managing the implementation of selected options. Each phase has series of sub-phases (total of 9). For the purpose of this study, greater attention will be placed on the planning and managing phases as many of the target Councils have developed an adaptation plan. The framework introduces a set of pre-identified barriers under each sub-phase which have been frequently identified in the adaptation literature and may be used as prompts during the study. A question that is applied to every stage in the processes includes: *what can stop, delay or divert the adaptation decision-making process?*

**Phase 2: Structural Elements of Adaptation**

This phase emphasises the significance of context and aims to understand why a given barrier arises in the adaptation process by considering three interconnected structural elements which includes: the actors, the object upon which they act (the system of concern that is exposed to climate change) and the broader context in which the actor and the system of interest is embedded (e.g., governance). It guides the research to examine how the context shapes local government to collaborate and learn through the networks (Bosomworth and Handmer, 2008). In establishing the sources of the barriers, phase 2 asks the following questions: *What causes the impediments? How do the actors, context and the system of concern contribute to the barriers?*

**Phase 3: Locating possible points of intervention**

The final phase aims to help map the source of the barriers relative to the actor's influence over it through adopting a simple matrix which considers the spatial/jurisdictional (proximate/close versus remote barrier) and temporal origins (contemporary/recent versus legacy/inherited) of the barriers relative to the location of the actor. The matrix offers a useful approach to ranking the barriers.

## 5 NEXT STEPS

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The project described in the first section of this document, will build on the knowledge presented here to further the understanding of the cross-scale barriers to climate change adaptation and will propose options and mechanisms to overcome them.

The process will include:

- 3 workshops with LG representatives and multi-stakeholders,
- case studies reflecting the critical barriers
- 20 key informant interviews in various States to validate results and desktop studies.
- A checklist matrix of 8-10 critical barriers for LG across Australia will be developed with proposed strategies to overcome them.

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## APPENDIX A: AUSTRALIA’S NATIONAL CLIMATE CHANGE ADAPTATION LANDSCAPE

Australia’s National Climate Change Adaptation Landscape				
<p><b>Research:</b></p> <ul style="list-style-type: none"> <li>• National Research Priorities includes “An Environmentally Sustainable Australia”</li> <li>• NCCARF</li> <li>• CSIRO Climate Adaptation National Research Flagship</li> <li>• Australian Climate Change Science National Framework</li> </ul>	<p><b>Guidance Materials:</b></p> <ul style="list-style-type: none"> <li>• Local government Climate Change Adaptation Toolkit (ICLEI for DCC, 2008)</li> <li>• Climate Change Adaptation Actions for Local Government (2009)</li> <li>• Climate Change Adaptation Action Plan (2009)</li> <li>• AS/NZS ISO 31000 Risk Management - Principles and guidelines</li> <li>• Climate Change Impacts and Risk Management Guide: A Guide for Business and Government (Australian Greenhouse Office, 2006)</li> </ul>	<p><b>Sector based programs / funds</b></p> <ul style="list-style-type: none"> <li>• Local Adaptation Pathways Program</li> <li>• Integrated Assessment of Human Settlements sub-program Australia’s Farming Futures</li> <li>• Caring for our Coasts</li> <li>• Forest Industries Climate Change Research Fund</li> <li>• Climate change adaptation skills for professionals</li> <li>• Water for the Future</li> <li>• Natural Disaster Resilience Program Grants Scheme</li> <li>• Local Government Reform Fund - building local government capacity by funding collaborative projects which help build resilience in critical areas incl. CCA</li> <li>• The LivingGreener website</li> <li>• ICLEI and Insurance Council of Australia</li> </ul>	<p><b>Vulnerability Assessments:</b></p> <ul style="list-style-type: none"> <li>• National Coastal Vulnerability Assessment</li> <li>• Biodiversity Vulnerability Assessment</li> <li>• Implications of climate change on World Heritage properties</li> <li>• Implications of climate change on Australia’s National Reserve System</li> <li>• Interactions between climate change &amp; fire regimes and biodiversity in Australia: A Preliminary Assessment</li> </ul>	<p><b>Legislation and Policy:</b></p> <ul style="list-style-type: none"> <li>• Water Act 2007</li> <li>• National Biodiversity and Climate Change Action Plan, 2004 – 2007</li> <li>• National Cooperative Approach to Integrated Coastal Zone Management – Framework and Implementation Plan (Department of the Environment, Water, Heritage and the Arts)</li> <li>• Climate Change Adaptation Action Plan (Ministerial Council for Police and Emergency Management, 2009)</li> <li>• Developing a national coastal adaptation agenda: A report on the National Coastal Climate Change Forum (2010)</li> <li>• COAG National Strategy for Disaster Resilience</li> </ul>
<p>Note: Text in green refers to the Climate Change Adaptation Program and Framework</p>				



## APPENDIX B: LEGAL LANDSCAPE

State	Legislation	Policy / Plan	Guideline / Strategy / Action	Supporting Material
NSW	Environmental Planning and Assessment Act 1979 (*see below)	Local Environmental Plans (LEPs)	NSW Flood Risk Management Guide	NSW Climate Change Impact Profile
	Local Planning Directions under s117(2) of the Environmental Planning and Assessment Act 1979	Development Control Plans	NSW Coastal Risk Management Guide	NSW LGSA Climate Change Workshop Package, “Action Pack”.
	State Environmental Planning Policy 71 and Standard Instrument Clauses	149 Certificates	NSW Regional Strategies	NSW Mayors agreement on CC (23 signatures)
	*Environmental Planning and Assessment Regulation 2000	NSW Flood Prone Land Policy	Coastline, Estuarine and Floodplain Management Manuals	The Coastal Protection and Other Legislation Amendment Act 2010 established a NSW Coastal Panel
	State Environmental Planning Policy (Infrastructure) 2007	NSW Sea level Rise Policy Statement 2009	NSW Coastal Planning Guidelines: Adaptation to Sea Level Rise	Climate Change Risk and Vulnerability Report (NSW LGSA)
	*Coastal Protection and Other Legislation Amendment Act 2010 (This Act amended the Coastal Protection, Local Government and Environmental Planning and Assessment Acts, and three regulations)	NSW Coastal Policy	NSW Government Coastal Zone Management Manual	NSW Legislative Assembly Standing Committee on Natural Resource Management (Climate Change): a completed standing committee of the Legislative Assembly, established 21 June 2007, and ended 22 Dec 2010.
	Local Government Act 1993	NSW State Plan 2021	Adapting to Sea Level Rise, 2009	

		(climate change mentioned in Goal 23) NSW Memorandum of Understanding with the LGSA on Climate Change State Environment Planning Policy (incl Infrastructure, Coastal Protection etc.)		
Vic	Coastal Management Act 1995	Coastal Action Plans	Victoria Coastal Strategy 2008	\$5 million ‘Centre of Excellence’ for climate change adaptation research Infrastructure and climate change risk assessment for Victoria
	Climate Change Act 2010 (amends several acts)	State Planning Policy Framework, cl 15.08 (Managing coastal hazards and the coastal impacts of climate change) (incorporating the Victorian Coastal strategy)	The Future Coasts Program, Victoria Flood Management Strategy	
	Victorian planning provisions (Planning Certificates) Planning and Environment Act, 1987 (more specifically section 60(1)(e) – P&A Act Environment Protection Act 1970 (Vic) (EP Act)	State Environment Protection Policy	Regional Floodplain Management Strategies Victoria Green Paper	Victorian Climate Change Green and White Papers
	Transport Integration Act 2010 (Vic)		Ministerial Direction no 13 and General Practice Note 2008: Managing coastal hazards and the coastal impacts of climate change Coastal Advisory Note: How to consider sea level rise along the Victorian Coast, Department of	

	Public Health and Wellbeing Act 2008 ( <i>Vic</i> ) Local Government Act 1989		Sustainability and Environment, 2008	
Qld	Coastal Protection and Management Act 1995 ( <i>Coastal Act</i> )  Sustainable Planning Act 2009  Integrated Planning Act 2007 (Qld) Coastal Protection and Management Regulation 2003 (Coastal building lines)  Local Government Act 2009	South East Queensland Climate Change Management Plan (2009 – Draft for public consultation) State Coastal Management Plan 2009 – Queensland Coastal Policy Floodplain Management Program Regional Coastal Management Plans (Wet Tropical Coast, Cardwell – Hinchinbrook, Curtis Coast, South-east Queensland, Mackay-Whitsunday) State Planning Policies – 1/03 (Mitigating the Adverse Impacts of Flood, Bushfire and Landslide) South East Queensland Regional Plan 2009-2031 Qld Coastal Policy and Plan and coastal hazard	ClimateQ: Towards a Greener Queensland  ClimateSmart 2050  ClimateSmart Adaptation: 2007-2012 Action Plan	Climate Change: Adaptation For Queensland, Issues Paper (2011)  Queensland Climate Change Centre of Excellence (est. 2007)

		area maps Far North Queensland Regional Plan 2009-31		
SA	Climate Change and Greenhouse Emissions Reduction Act 2007 Development Act 1993  Development Regulations 2008 Environment, Resources and Development Court Act 1993 Environment Protection Act 1993 <i>Natural Resource Management Act 2004</i> <i>Local Government Act 1999</i>	LGA Climate Change Strategy 2008-2012  Climate Change Adaptation Framework 2011 State NRM Plan	SA Local Government Sector Agreement – Climate Change  Regional Plans for SA	Premier’s Climate Change Council
Tas	Climate change (State Action ) Bill 2010 (Tas) Coastal and Other Waters (Application of State Laws) Act 1982 (No. 12 of 1982) National Environment Protection Council (Tasmania) Act 1995 (No. 54 of 1995) Natural Resource Management Amendment Act 2009 (No. 15 of 2009) Resource Planning and Development Commission Legislation (Miscellaneous	Tasmanian Framework for Action on Climate Change Tasmanian State Coastal Policy 1996 D 3 (S3)  Tasmania Economic Development Plan 2011	Climate Change Impact Statements Draft Climate Change Strategy for Tasmania 2006  Climate Change Office partnership program	\$3 million Climate Futures for Tasmania Tasmanian Coastal Adaptation Decision Pathways (TCAP) Project Partnership agreement with local government (2008)  Tasmanian Climate Action Council & Climate Change Adaptation Unit ClimateConnect grants program



	Amendments) Act 2009 (No. 28 of 2009) Local Government Act 1993			Regional Councils Climate Adaptation Project (RCCAP)
WA	Development and Planning Act 2005	State Coastal Planning Policy No 2.6	WALGA Climate Change Strategy	Office of Climate Change now absorbed into DEC and called the Climate Change Unit - developing climate change adaptation and mitigation strategies.
	Environmental Protection Act 1986	Coastal Zone Management Policy for Western Australia	Indian Ocean Climate Initiative (IOCI)	
	Local Government Act 1995		West Australia's Greenhouse Strategy (2004)	
NT	Local Government Act 2011	Northern Territory Climate Change Policy (2009)		
ACT	Climate Change and Greenhouse Gas Reduction Act 2010		'Weathering the Change', ACT Climate Change Strategy 2007-2025	ACT Climate Change Council established to advise the ACT Minister for the Environment, Climate Change and Water on strategies to reduce greenhouse gas emissions and adapt to climate change
	Australian Capital Territory (Self-Government) Act 1988			

Source: DECCW (2009), England and McDonald (2007), Pillora (2010) and state / territory policy documents.

**APPENDIX C: STATE AND TERRITORY LOCAL GOVERNMENT ADAPTATION INITIATIVES**

State	Initiative	Details	Status
NSW	Memorandum of Understanding (MOU) with the LGSA and DECC on climate change	The MOU supports collaborative responses on climate change adaptation between the Local Government and Shires Associations of New South Wales (LGSA) and the Department of Environment and Climate Change NSW (DECC)	Ongoing from 2010
	Statewide Mutual Local Government Self Insurance Scheme	Statewide Mutual Pilot study: Climate change risk assessment and adaptation planning	current
	That's a Good Idea! Climate Adaptation	Centroc project funded by NSW Environmental Trust <a href="http://www.centroc.com.au/environment/climate-risk-assessment">http://www.centroc.com.au/environment/climate-risk-assessment</a>	current
	Local Government Climate Change Mitigation and Adaptation Program: Action Planning	NSW LGSA estimate >40% of councils are undertaking adaptation planning and approx. 40% have completed risk assessments	Current (as of September 2010)
	Statewide / Echelon Risk Workshops	Risk assessment workshops were conducted with 31 of NSW LGSA's member councils, aligning with Department of Climate Change (DECC) guidelines and the Risk Management Standards AS/NZS 4360 and ISO 31000	
Vic	Local Government Self Insurance Scheme	Civic Mutual Plus (CMP): Local Government mutual liability self-insurance scheme, set up to provide liability insurance to Victorian and Tasmanian councils (and other Authorities).	current
	Climate Communities program	\$23 million program to support community initiatives. Grants up to \$50,000 are available for community actions on climate change	Current (as of September 2011)
Qld	Adapting to Climate Change: A Queensland Local Government Guide	Assists local councils assess potential climate change impacts and plan responses	2007 Document
SA	Local Government Self Insurance Scheme	Local Government Risk Services (LGRS): Local Government in South Australia	current
Tas	Tasmania Partnership agreement with local government (2008)	Statewide partnership agreement, signed in 2008, between the Tasmanian Government and LGA of Tasmania.	Current (as of December 2008)
	Local Government Self Insurance	Civic Mutual Plus (CMP): Local Government mutual liability	current

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	Scheme	self-insurance scheme, set up to provide liability insurance to Victorian and Tasmanian councils (and other Authorities).	
	Tasmania Climate Connect Community Grants Program	Grants of up to \$20,000 for local organisations better prepare for climate change	Current (last round closed December 2011)
WA	WA Local Government partnership program	Nine Local Governments covering the coast from Cape Peron to Cape Naturaliste in the South West of Western Australia, have signed a Memorandum of Understanding which pledges cooperation and integration of effort in responding to the impacts of climate change	Current (as of March 2011)
	Local Government Self Insurance Scheme	LGIS <i>self-insurance scheme</i> - Jardine Lloyd Thompson Pty Ltd: WALGSA	current
NT n/a			
ACT (n/a)			