



Local
Government
Climate
Adaptation
Program

South Australia

"In accepting that climate change is a reality, we also accept that, in future, the resilience of Australian communities will be further challenged by shifting rainfall patterns, extreme weather events and changing climatic zones. Against this backdrop, climate adaptation will continue to gather momentum as a priority for all levels of government in Australia - none more so than Local Government, which works most closely with the local communities it leads and serves".

John Ross, Chairman, Local Government Association Mutual Liability Scheme. Jan 2010



About the Program

The LGAMLS Climate Adaptation Program (CAP) stands as the first coordinated assessment of climate change risks of a government sector in Australia. The Program aims to give South Australian Councils a framework to translate climate impacts into identified risks to their business operations, whilst developing realistic adaptation measures over short and long-term planning horizons.

Program Background

Adopting climate change as one of Local Government's highest priority activities, the LGA's State Executive Committee developed a comprehensive Climate Change Strategy (CCS) in 2008.

The CCS was an important inclusion in the joint Climate Change Sector Agreement with the South Australian Government. Among other measures, the Sector Agreement 2008 outlined the proposed Climate Change Risk Management Assessments and Adaptation Program, (now referred to as the Climate Adaptation Program). The Sector Agreement commenced on 4 June 2008.

With a focus on the delivery of consistent industry outcomes and a 'whole of sector' approach, significant funding was provided by the LGA through its LGA Mutual Liability Scheme (LGAMLS) to implement the Program over a two-year period from mid-2008.

Stage one of the Program committed to completing 25 plans within 18 months from the commencement of the Sector Agreement. The program exceeded this target, with the LGAMLS partnering with 29 South Australian Councils (approximately 50 percent of metropolitan and rural Councils).

Methodology & Design

The Program was designed in recognition of the need for a flexible approach that would meet individual Council operations and requirements, understanding that, for each Council:

commitment from the Chief Executive Officer and Executive Management would ensure delivery of best outcomes

officers responsible for environmental issues and risk management would be best placed to drive the program from within individual Councils

consistent climate change scenarios selected in consultation with Bureau of Meteorology (BOM) would be critical to determine appropriate risks from predicted exposures

adopting an organisation-wide risk management model and involving a variety of staff with knowledge of all Council operations would assist Councils to incorporate the CAP outcomes into annual strategic plans

the Program should successfully link various climate scenarios to identified impacts across all functional areas of Council

Program outcomes provide a sound base to assist Councils with the development of sustainability, emergency and other mitigation strategies.

Risk Analysis

Risks were broadly assessed against the level of impact they would have on a community, in terms of the ability of that Council to continue its public administration and governance functions. This ability is expressed in terms of the CAP's success criteria. The criteria relate directly to the Local Government Act 1999 and, can best be described as long-term objectives that underpin Council operations:

Maintain public safety

Protect and enhance the local economy

Protect existing community structures and the lifestyle enjoyed by the people of the region

Sustain and enhance the physical and natural environment

Ensure sound public administration and governance.

The CAP makes the assumption that the climate change variables will occur. The analysis of each risk takes into account all existing or current controls and treatment methods that may impact on the risk. Risks were assessed by:

1) rating the level of impact a risk event would have on a community (in a range from 'insignificant' to 'catastrophic')

2) exploring the consequences those impacts would have on a community's resilience (as expressed by the success criteria)

3) rating the likelihood of a risk event occurring (in a range from 'rare' to 'almost certain')

4) assigning risk management priorities.



Potential impacts for Local Government

The following is a list of potential impacts on Local Government, relevant to each of the climate change variables considered during the risk management process:

Extreme Temperature

Increase in:

- heat-related health issues of the elderly, sick and economically disadvantaged
- dog and cat management issues
- visitation to swimming pools, beaches and Council-owned infrastructure that provides cooling
- security and vandalism issues during summer
- incidence where stop-work criteria are met for Local Government employees and contractors
- work-related health issues
- cancellation of community and sporting events
- incidence of falling tree limbs from large Eucalypt species
- peak demand for energy for cooling during summer
- food and water-borne diseases
- susceptibility of dams, lakes and other water bodies to algal blooms

Decrease in:

- the integrity of exposed building materials, increasing maintenance and replacement costs
- the integrity of road pavement, increasing maintenance and replacement costs

Change in community behaviour where less business is undertaken during normal business hours or increasing preference to utilise information technology

Spontaneous combustion of waste management cells

Overheating of Local Government equipment (fixed and mobile), increasing maintenance and replacement costs

Potential for power black-outs and implementation of business continuity plans.

Reduced Average Rainfall

Increase in:

- maintenance and replacement costs for recreation reserves and playing fields (turf, water supply, irrigation equipment)
- cracking damage to buildings when combined with temperature
- cracking damage to water and sewerage infrastructure leading to contamination and pollution

Decrease in availability and quality of water supply

Closure of playing fields due to damage to turf
Emergency management for distribution of alternative water supply

Death of reserve and roadside vegetation.

Extreme Rainfall

Increased incidence of water borne virus

Flooding of:

- Council buildings and infrastructure
- Council facilities and recreation areas

Damage to Council buildings and infrastructure (stormwater, roads and bridges etc)

Emergency management for flooding events

Development planning in flood prone areas.

Sea Level

Inundation of development planning zones

Inundation and flooding of existing development and transport network

Erosion of sand from coastal areas leading to stability issues with Local Government infrastructure (buildings, roads, water and sewerage systems)

Damage to buildings, water infrastructure and recreation facilities from storm surge

Increase in soil salinity and damage to buildings and infrastructure

Salt water intrusion of aquifers and contamination of water supply

Stormwater systems becoming redundant due to failure of systems

Management of events on coastal foreshore.

Emergency management of inundated areas

Constrained retreat of salt marsh and mangroves due to levees and road infrastructure.

Extreme Bushfire Weather

Increase in:

- number of permits for lighting and maintaining fire issued by Local Government Authorised Officers
- volume of Hazard Assessment under the SA Fire and Emergency Services Act 2005

Damage to Local Government infrastructure, parks and recreational facilities

Use of Local Government infrastructure, assets and facilities for response and recovery of bushfire

Business continuity planning during bushfire incidents due to interruptions to business, and employees undertaking response and recovery functions

Currency of Bushfire Risk Management Planning including currency of plans and obligations under the SA Fire and Emergency Services Act 2005

Use of high bushfire risk equipment by Local Government and contractors on days of a Total Fire Ban

Management of:

- assets and infrastructure (barbeques) located on Local Government reserves
- park and roadside vegetation

Replenishment of Local Government water supplies following bushfire

Development planning under the Bushfire Management Planning Amendment Report 2008.



Key Findings

Moving to a Climate-Resilient Sector

The Program has identified seven areas of Council operations that were repeatedly identified as requiring high-priority local adaptation measures.

1 Development Planning

Development planning plays an important role in managing the vulnerability of individuals and the community, particularly from those climate change variables that are expected to exacerbate the impacts of coastal inundation and bushfire

Development plan amendments are an important tool for managing development risks

Planning decisions should be supported by coastal mapping, preferably for a range of sea level rise scenarios

Bushfire protection area mapping should be monitored regularly to ensure compatibility with changing hazard scenarios.

2 Asset and Infrastructure Management

Asset and infrastructure management will present the greatest challenge to Local Government in terms of financial sustainability and community expectation

The impacts of extreme heat, reduced average rainfall and sea level rise all stand to hasten the rate of deterioration and maintenance regimes, prompt relocation and demand new infrastructure to be constructed in a more resilient manner

Asset management planning and careful consideration of climate impacts on the useful life of assets is the key to resilience and sustainability.

3 Emergency Management

The capacity of Councils to maintain statutory environmental health functions is likely to be challenged by increases in extreme weather events, in particular heat

Partnering with the State and Federal Governments is essential for maintaining service delivery of education and awareness campaigns regarding bushfire preparedness, vulnerable persons, extreme heat policies and community care programs

Councils predict a reduction in capacity to undertake bushfire hazard management.

4 Sustainability and Environmental Management

Regional partnerships with natural resources management boards supported by Council development plans are important for successful biodiversity management in a changing climate

Water use and quality management policy should be upgraded to meet future climate impacts.

5 Community Services and Recreation Facilities

Community expectations for Councils to provide ongoing services during extended periods of extreme temperature have already increased, thereby presenting service delivery and resource pressures

The provision of recreation facilities is severely impacted upon by increased temperatures and reduced rainfall. Sporting grounds and playgrounds are at extreme risk of deterioration and declined use in future years as they may not be "fit for purpose" for various parts of the year.

6 Health and Wellbeing

The capacity of Councils to maintain statutory environmental and health related functions is likely to be challenged by increases in extreme heat events

Partnering with Federal and State Governments and other recognised support agencies is essential for maintaining service delivery of community care programs during extreme heat/emergency situations

Compliance with Occupational Health Safety and Welfare (OHS&W) responsibilities with respect to Council members, employees and volunteers remains a high priority.

7 Council Prosperity

An understanding of major industry and sector climate impacts and risks will be important for Councils to lead their communities and make sensible decisions for community viability

Long-term financial planning will need to incorporate an assessment of how climate change factors will impact on both individual Council and whole-of-sector business.

The application of the CAP is supporting South Australian Local Government to better understand the climate-related risks to their communities and to develop adaptation strategies to create more resilient communities in the future.

The initial program has confirmed that a common risk-based assessment framework can be applied across 29 Councils with diverse locations to identify key risks on both an individual and sector-wide basis. This systematic framework, combined with in-depth engagement with local community leaders provides a strong basis for both individual and whole-of-sector decision-making.

While this report is by no means the complete answer to the complex problems faced by Councils from increased climate-related risk, it starts to provide a practical catalogue of climate-related risks at both local and state-wide levels and provides a foundation to support leadership, governance, policy making and decisions, to seek appropriate levels of funding. This foundation will ensure that Local Government in South Australia is better placed to build well-rounded and robust communities, notwithstanding future climatic impacts.



The Local Government Climate Adaptation Program is delivered by the Local Government Association Mutual Liability Scheme to all Councils in South Australia. The LGAMLS is a civil liability risk scheme operated by the Local Government Association of South Australia.

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