This Report has been prepared by the Local Government Association Mutual Liability Scheme (LGAMLS) on behalf of the Local Government Association (LGA), to summarise the findings of the LGAMLS Climate Adaptation Program. The LGAMLS funded this risk based initiative on behalf of all Councils, aimed at addressing identified climate and extreme weather event risks for the South Australian Local Government Sector.

The LGAMLS is established pursuant to Schedule 1 Pt. 2 (1) (a) of the Local Government Act 1999 as a business unit of the LGA, to provide civil liability cover and risk management services to all Councils in South Australia.

In reference to the technical information contained within the report, the LGAMLS acknowledges and has relied on the Australian Government Department of Climate Change “Adapting to Climate Change” report. Further the LGAMLS acknowledges the participation and support of all Councils in South Australia in completing the programme which delivers a whole of sector view on the perceived risks and opportunities emanating from identified climate and extreme weather events.

LGAMLS 2012

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PREFACE

“In Australia over the last 12 months severe weather events have cost the Australian community an estimated $4.2 billion in insured losses. With weather events predicted to become more severe, improving the community’s ability to withstand and recover from severe weather events is vital.

Community resilience to more severe weather is crucial for appropriate risk management of the built environment. Individuals and businesses need to change their perceptions of what can and should be done to prepare for and recover from severe weather events.

... It is the responsibility of the general insurance industry, governments, and the Australian community to take action on this issue. Policy decisions and key actions that can be taken to achieve greater resilience must be consistent across all tiers of government.”

Ms Kerrie Kelly, CEO, Insurance Council of Australia, September 2009

Fast forward to 2012, and this visionary statement by the ICA has proven to be accurate. Since 2009 Australia continues to experience random and extreme weather patterns culminating in the most fierce bushfires, floods, earthquakes and windstorms ever experienced in recorded history.

No one entity can combat the insidious impacts of these natural disasters. All levels of Government have taken a role in the responsibility to take proactive action to mitigate the impacts. Supporting and assisting communities to build resilience is paramount.

With vision, the LGAMLS Board invested significant funding in 2009, realising the potential for attracting sector wide and significant civil liability risks if Councils failed to address the potential of climate adaptation related risks when undertaking its statutory duty. The majority of the sector embraced the opportunity provided by the LGAMLS, allowing enough data collection to complete a comprehensive sector based risk profile.

The LGAMLS Climate Adaptation programme was delivered in accordance with the Commonwealth Government’s Climate Adaptation framework based on the AS/NZS Risk Management Standard ISO 31000.

The Local Government Climate Adaptation Program – Interim Report explored the initial findings of the programme based on findings by individual Councils and resulted in:

a) An Individual Council Climate Adaptation plan for integration into the Council’s Strategic Plan, and

b) A “climate risk profile” of the whole sector relevant to the impact of potential climatic changes.

While the Interim Report is a summary of this progress at the 18 month mark of a two year programme, the final stages of the CAP has not revealed any major shift in identified trends. The following sector wide issues remain at the forefront:

- Natural Disasters – Emergency Management
- Asset & Infrastructure (including Trees) Management
- Communication & Network Management
- Employees and Volunteers Management
- Council as the Community Leader (not the Hazard Leader)
- Health, welfare and safety of the Community
- Financial Management, including insurance options

With the benefit of the CAP outcomes, the State Local Government Sector Agreement has worked together to define and address the priority sector related adaptation measures.

The CAP programme has enabled Councils to maintain the connections with local impacts, risk profiling and the strategic planning environment, in order to focus on adaptation treatments and other sector initiatives. Through this method, Councils acknowledge that climate adaptation is good business and fiscal management. As a long term strategic issue that stands to have important effects on the growth and prosperity of Councils individually and regionally, this leads to better informed, aware and resilient communities.

For example, coastal management, extending to planning and traffic management, has emerged as a significant risk issue to several rural coastal Councils. Isolation of various portions of the community is a major issue in the event of a natural disaster emergency – impacting on all of the 7 listed sector wide risks. There is the potential for increasing budgets to either create new access roads or increase resilience for higher traffic volume of alternative roads. Councils have treated this risk by integrating an assessment of road inundation frequency into traffic management studies in order to develop a long term plan for road infrastructure. Further engagement with State Government agencies is being undertaken by Coastal Councils to ensure that there is coordination between the two road authorities.
Adapting to the impacts of Climate Change

The following paraphrases the Australian Government’s vision for adapting to the impacts of climate change based on the Adapting to Climate Change in Australia – An Australian Government Position Paper released on February 2010.

Adapting to the impacts of climate change will be a substantial ongoing challenge for all Australians well into the future. Meeting this challenge will require contributions from governments at all levels, businesses, communities and individuals. Individuals and businesses will adapt to developments as they unfold. However, Governments have an important role to play in creating the right framework and in providing appropriate information to allow the private sector to make well-informed decisions. To this end, the Australian Government is working through the Council of Australian Governments (COAG) to develop a national adaptation agenda. This agenda aims to clarify roles and responsibilities for adapting to the impacts of climate change and to prioritize areas for collaborative action between governments to position Australia to manage the unavoidable impacts of climate change.

Some climate change is unavoidable

Already Australia faces a stark fact—the opportunity to avoid climate change altogether has passed. Adapting to the impacts of unavoidable climate change is critical to any effective climate change response. Along with efforts to reduce Australia’s emissions and help to shape the future, adaptation is one of the three pillars on which Australia’s comprehensive climate change strategy is built.

Risks are serious and pervasive

Even if climate change can be contained to around 2°C of global warming, Australia will have to manage serious and pervasive risks from climate change impacts. In 2007 the IPCC concluded that, for Australia, “Ecosystems, water security and coastal communities ... have a narrow coping range. Even if adaptive capacity is realised, vulnerability becomes significant for 1.5 to 2.0°C of global warming. Energy security, health (heat-related deaths), agriculture and tourism have larger coping ranges and adaptive capacity, but they may become vulnerable if global warming exceeds 3.0°C.”

While individual events cannot be directly attributed to climate change, extreme events experienced over the period 2009 - 2011 are consistent with projected changes and demonstrate our vulnerability. The heat wave in south-eastern Australia in January and February 2009 illustrates our vulnerability to extreme heat events. This heat wave set new record temperatures and had impacts on human health, infrastructure and ecosystems. During this heat wave, major electricity connectors failed, railway lines buckled, causing transport delays and there was a spike in heat related deaths. Climate change will result in more hot waves. Hotter and drier conditions are also projected to result in more intense and more frequent bushfires. In the last decade, Australians have experienced fires that appear consistent with these predictions.

Climate change risks will be pervasive. The impacts of climate change will affect almost every facet of Australia’s economy, society and environment. Adapting to climate change will involve all levels of government, business and the community. Governments, councils, big business, small business owners, farmers, communities, families and individuals will all be affected by climate change in many, if not most, aspects of their lives. We will need to adapt our businesses and our lifestyles to less rainfall in many areas, more hot days and more extreme weather events.

We need to pay attention now to our climate change adaptation needs

It will take time to adapt. Adaptation to climate change is a new challenge. It will take time to build the skills and knowledge we need to manage climate change impacts. Urban water supply managers, for example, have a long history in dealing with, and adapting to, high variability in rainfall across much of Australia. However, it will also be necessary to try new approaches to emerging climate change risks and draw lessons from both successes and failures.

And once we have begun to adapt it will take time for some decisions to make a difference. For example, new building standards will be needed to enable buildings to withstand more severe weather events. But, once those new standards are agreed, it will take time to implement them both in existing buildings wherever possible and in new structures as our building stock is gradually replaced.

Adaptation is a shared responsibility—governments, business and the community all have a stake and a role in responding to climate change impacts

Just as adapting to the impacts of climate change is a new challenge, it is also a shared challenge, and a shared responsibility. Governments at all levels, businesses, and the community have important, complementary and differentiated roles in adapting to the impacts of climate change. Defining these roles will allow all parties to begin planning for a changing climate and take whatever action is necessary to adapt to climate change impacts.

Adapting to the impacts of climate change is, in large measure, about managing risks. Risks will be dealt with most efficiently if they are well understood and allocated to those who are best placed to manage them.

Insurance markets are commonly used to spread risks—such as the risk of fire, theft or motor vehicle accidents—across the community. The price of insurance can be an incentive for people to adapt or avoid particular behaviors. Insurance markets could be valuable in managing risks from climate change, for example by providing incentives for people to take actions that reduce exposure to climate change impacts.

Governments have an important capacity building and reform role

Governments have an important role in creating the right conditions and incentives for businesses and the community to make efficient investment decisions and manage risks from climate change impacts.

Providing information for business and communities to adapt

Communities, individuals can only take effective action to adapt to climate change if they are well informed about its potential impacts and risks. It is in the interests of communities and individuals to invest in the specific information they need to assess and manage their risks from the impacts of climate change. However, there is little incentive for them to invest in basic knowledge that may be of limited benefit to them but of broader public benefit. All Governments have a role to play in filling these information gaps, including the provision of better public information (such as high quality climate projections) to build understanding and better inform decision making across both the public and private sectors.

Setting the right conditions for business and communities to adapt

An effective response to climate change will require contributions from and engagement by all levels of government as well as business and the community. Governments have an important role in establishing the right conditions for business and communities to make efficient investment decisions that are able to take appropriate account of climate change impacts. Governments must ensure that regulatory arrangements do not distort market signals and facilitate the ability of all to adapt to climate change. Governments also need to ensure that risk is appropriately recognised and apportioned. Policy instruments, such as land-use planning, codes and standards or environmental or public health legislation, can play an important role where market mechanisms are ineffective.

The roles of Commonwealth, State, Territory and Local Governments are different

Different levels of Government have different responsibilities and will therefore have different roles in helping Australia adapt to the impacts of climate change.

The Australian Government has stewardship of the national economy and is responsible for promoting Australia’s national interests more broadly. As climate change will impact on virtually every sector of the economy and society, the Commonwealth will need to take a leadership role in positioning Australia to adapt to climate change impacts that may affect national prosperity or security. In some cases this will require direct action, for example the Australian Government manages some important assets—including natural assets such as Kakadu—that are vulnerable to the impacts of climate change. In other cases the Commonwealth will play a role in driving and coordinating national reform efforts.

State, Territory and Local Governments, by contrast, deliver more services and manage more assets than the Commonwealth Government. These entities will therefore have a greater role in direct adaptation action, including decisions on urban land release. State and Territory Governments are also responsible for a good deal of regulation that bears on our ability to adapt to the impacts of climate change. Building codes and land use planning regulations are examples.

In many cases impacts of climate change are most effectively managed by a single State, Territory or Local Government

In other cases a combined response by several governments or tiers of governments will be required. In cases where a number of governments must act, or where national leadership by the Commonwealth is required, COAG may be the appropriate body through which to adopt. Local Governments will be key actors in adapting to the local impacts of climate change and the engagement of Local Government will be a critical part of any national reform agenda.
The topic of Climate Change continues to be complex and highly dynamic. Information and processes are regularly updated to ensure that a Council, as a statutory body, policy and decision maker, has the best available information to analyse and implement programs into its day to day business.

Local Government in South Australia has taken a consistent and united approach to climate change, by adopting adaptation as the basis for building capacity to make continual adjustments to the impacts of perceived climate change. The LGAMLS developed a programme that was deliverable to all Councils and based on a methodology that is flexible to ensure integration into each Council’s strategic plan.

To complete the CAP, “local” influences were required to be considered and adopted in order to identify the different role local government will play in assisting the whole of the community to adapt to the impacts of climate change. Despite this, the CAP findings are strikingly similar to, and consistent with, those of the Commonwealth Government’s report.

The CAP process has successfully built the platform upon which Councils in South Australia can partner with all stakeholders to build a consistent strategic approach to a whole of community resilience.

The LGA Climate Change Strategy included the completion of a sector based Climate Change Risk Management Assessment and Adaptation Program over 2 years during 2009-12. The completion rate (95% or 63 of the 68 Councils) has allowed the LGAMLS to develop a sector profile of the high priority issues that Local Government has recognised as high priority, with respect to climate adaptation.

The aim of the CAP was to capture relevant risk/opportunity related data, based on predicted climate variables that can support Local Government in South Australia to develop individual/regional based climate adaptation modeling and adaptation plans. Further, the framework of the CAP has enabled the development of a sector profile relevant to climate change adaptation risks and opportunities that are recognised as a priority for South Australia, in partnership with the State Government.

Summary of outcomes from Interim Report

The increasing impact of climate risks for Local Government are spread across a variety of strategic and operational areas. These are not limited to financial, liability or legal exposures. Local Government has a risk frequency trend that reflects its diverse role as a tier of government. Risks associated with financial management and sustainability are identified as the most important risk area for Councils.

During the risk analysis phase, an assessment was undertaken to determine risk trends for intolerable (Extreme and High) risks in Local Government functions, as determined by the Local Government Act 1999. Other identified high risks for Councils emanating from climate change is the management of assets (community infrastructure) and development planning, in particular as a result of dealing with the impacts from extreme temperature events, reduced average rainfall and sea level rise.

<table>
<thead>
<tr>
<th>Climate Change Variables: High &amp; Extreme Risks</th>
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<tbody>
<tr>
<td>Sea level rise</td>
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<tr>
<td>Extreme bushfire weather</td>
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<tr>
<td>Extreme rainfall</td>
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<tr>
<td>Reduced average rainfall</td>
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<tr>
<td>Extreme temperature</td>
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</table>
The Program has identified seven areas of Council operations that were repeatedly identified as requiring high-priority local adaptation measures. These seven areas are:

1. Development Planning
2. Asset and infrastructure management
3. Emergency management
4. Sustainability and environmental management
5. Community services and recreation facilities
6. Health and wellbeing
7. Council prosperity

Each of these is discussed below in more detail and with accompanying adaptation identified measures.

1. Development planning

**Key Points**

- 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.

**Building in the coastal zone**

Potential sea level rise and other impacts (erosion) are considered within development planning policy and amendments (DPA) together with coastal Councils’ development plans. By adopting a risk management approach to the assessment of development applications and land-use planning, and diligently applying planning policy, Councils are less likely to be adversely affected, in the form of private/public nuisance resulting in negligence-based claims.

Two key risks may arise from the current planning policy for Councils:

1. In achieving the requirements of the development plan to maintain coastal protection buffers, relationships between Council and developers may become strained, increasing Council’s involvement and management of the process. In this situation, low-lying areas zoned for development may enjoy minimal or no development due to inland retreat of the coastline and the continual management of a highly mobile dune system - the very buffer that policy seeks to protect. South Australian Councils also stand to have a reduced capacity in terms of land availability for development in prime coastal locations.

2. For areas within 500m of the coastline and low-lying areas beyond this zone, mandatory referrals of development to the Coastal Protection Board creates the potential for inconsistencies. These areas are likely to suffer the same impacts as above.

Adaptation for these risks is predicated by access to high-resolution coastal mapping to assess the validity of coastal protection buffers and other policy such as residential zones contained within the development plan.

Adaptation measures for coastal Councils

- Engage with relevant State Government departments to ensure both tiers of government have a consistent understanding and systematic approach to dealing with the impacts of sea level rise in the Council area.
- Develop a sea level rise impacts and risk-based information paper to enhance Elected Members’ understanding of the issues.
- Engage with the LGA to initiate discussions with relevant State Government agencies to clarify roles, responsibilities, and expectations regarding development planning in the coastal zone, in particular freehold lease and land management agreements.
- Advocate for the establishment of a responsible authority on coastal sea level rise planning decisions.
- Investigate alternative funding sources to undertake coastal sea level rise mapping including Commonwealth/State grants, LGA Research and Development Fund and partnerships with tertiary institutions and other relevant stakeholders.
- Engage with the Department of Transport, Energy and Infrastructure to clarify roles, responsibilities, and ownership of Crown Land and roads that become permanently inundated as a result of sea level rise (LGA/LGAMLS Roads and Infrastructure Project).

**Building in bushfire-prone areas**

Policy associated with building in bushfire prone areas was established by the State Government Bushfire Management DPA, which referred planning policy and mapping to Council development plans. Risks associated with this include:

- the currency of the maps which inform bushfire protection areas;
- the relevant application of levels of planning; and
- triggers for referral to the SA State Emergency Services/Country Fire Service.

Trends towards updating the bushfire hazard mapping over long planning horizons in the development plans, are potentially incompatible with the pace of change of climate events that influence the severity of bushfire weather. It has been evident that all Councils with bushfire protection areas expect State Government planning authority mapping to be updated regularly to adequately inform decision making regarding bushfire risk.

Adaptation measures for Councils in bushfire prone areas

- Engage with the Department of Planning and Local Government to ensure the accuracy bushfire hazard modelling. Ensure the frequency of development plan bushfire protection area hazard mapping updates reflect predicted changes to bushfire frequency and intensity.
- Engage with the SA State Emergency Service/Country Fire Service and other authorities to:
  - ensure bushfire management planning policies meet changing bushfire conditions; and
  - develop a compliance priority schedule and key performance indicators for bushfire.
2. Asset and infrastructure management

Key points

- 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 of assets, change maintenance regimes, prompt relocation and demand the construction of new, more resilient infrastructure.

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

Changes to asset life

Buildings, roads, footpaths and other Council assets are at risk of a reduced asset life together with increased costs for maintenance. There is a need to increase resilience to the effects of extreme heat, reduced average rainfall and coastal inundation. Council buildings are susceptible to damage from cracking as a result of soil movement and regular or permanent inundation from sea level rise and storm surge. The value of assets along the South Australian coastal zone is significant and a high percentage of these assets will need to be relocated and/or decommissioned. Adaptation measures include placing a greater emphasis on the life cycle of an asset, triggers for maintenance and relocation strategies.

A trend is developing for rural road networks: the risk of damage to sealed roads from extreme weather events will necessitate changes to the average resurfacing period and see a need to consider more resilient materials in construction.

With reduced capacity to undertake regular grading operations, unsealed roads have been identified as being more likely to present public safety issues as deterioration becomes more rapid. In some cases, Councils may need to increase budgets to engage additional services like grading contractors and water tankers or alternatively, close these roads until conditions improve. Materials with greater resilience are being investigated to add significant costs to maintenance and construction programs.

Adaptation measures for Councils

- Undertake an industry-based review of current best practice guidelines for the inspection, treatment and monitoring of trees (as a Council asset).
- Integrate trees in asset management planning.
- Develop individual management plans for the protection and preservation of large native species, including adjusting open space design to include a greater area of mulching underneath tree canopies.
- Develop a community education campaign to inform the community of the benefits of tree street trees in adding value to properties, reducing the urban heat island effect and enhancing urban biodiversity, together with measures that Council has implemented to mitigate effects of invasive trees.

Water-sensitive urban design

A high percentage of Councils have identified risks associated with meeting community expectations to introduce water sensitive urban design into all aspects of the public realm and the costs associated with implementation and ongoing maintenance of such systems. Councils are leaders in adapting to the effects of ongoing drought; there are exceptional case studies of infrastructure such as aquifer storage recharge and water reuse schemes. However, there is no question that widespread implementation of similar systems in rural and regional areas could be cost prohibitive. Community wastewater management systems offer an opportunity for further analysis to expand this State's capabilities for water reuse.

Tree management

Reduction in average annual rainfall, extreme heat events and more extreme winds are taking their toll on the health and behaviour of trees, which has impacted on Councils’ tree management programs. Claim trends relevant to random limb and bough failure and unpredictable and invasive root system behaviour indicate that this is developing into a major resource issue and financial concern for the Local Government sector, with claim numbers escalating at a significant rate.

Adaptation measures for Councils

- Consider the effect of current legislation relevant to Local Government's powers in the overall management and ownership of trees.

Actions of the sea

The value of the coast to Local Government is reflected by a significant number and type of asset located within 200m of the coast, including open space, roads and public access, stormwater/ wastewater infrastructure, amenities, buildings and facilities that are Council- operated or leased. The management of these assets is particularly important to Councils' financial sustainability, given that the impacts of climate change (such as storm surge, flooding and erosion) are likely to accelerate in the coming decades. Leadership, policy development and decision making will need to reflect a principle that assures that new land use and development does not expose the community and Council assets to impacts of sea level rise over immediate and long-term planning horizons. Further to this, Local Government will need to develop engagement and education strategies to assist the community with prevention, preparedness, response and recovery strategies to address sea level rise hazards, together with information on Councils’ roles, responsibilities and protection works.

Leased assets

Omissions in specific lease agreements that demand immediate action to undertake mitigation in efforts to maintain functionality of assets, particularly those along the coast, present a risk to Councils. Coastal Councils assessed during the program are now undertaking an analysis of lease documentation to ensure that they have not unwittingly accepted some responsibility for impacts arising from extreme weather or climatic events. Adaptation measures include developing a long-term Council position and plan that establishes and clarifies Councils’ roles and responsibilities for sea level rise and storm surge, including policies for the protection, retreat or decommissioning of coastal community reserves and assets.

Coastal stormwater management

Coastal Councils have consistently identified risks associated with the performance of coastal stormwater management systems as result of the combined effects of sea level rise, storm surge and rainfall events. In some cases, assessments identified that there may be back-flow issues due to failures in gravity outflow, leading to the potential for liability claims as a result of flooding. Engineering alternatives are being investigated by relevant Councils to ensure optimum performance of their stormwater systems.

Adaquacy of sea walls and levees

Some Councils have existing seawall or levee infrastructure to mitigate the effects of high tides and storm surge. The risk issues for these Councils include the possibility that this infrastructure is unable to cope with future requirements. Climate change impacts such as water tables changes and salinity damage may, therefore, be unable to prevent coastal flooding. Analysing infrastructure design and upgrading infrastructure to mitigate those risks will incur further costs. Relevant Councils are now commencing engineering analysis to ensure enough tolerance is built in designs in relation to coastal inundation.

Wastewater management

Increased environmental contamination and public health issues arising from on-site wastewater systems and Community Wastewater Management Systems (CWMS) along the coast are of concern to a number of both country and metropolitan Councils. Successful mitigation of related risks will require:

- A spatial analysis of coastal properties to determine impact of sea level rise and storm surge on on-site wastewater systems.
- Service level reviews to increase the frequency of inspections to ascertain compliance and the condition of on-site wastewater systems.
The development of environmental health strategies for the decommissioning of on-site wastewater systems on the coastal foreshore.

The review of the useful asset life of CWMS.

The development of engineering solutions and/or a retreat and relocation policy for CWMS infrastructure.

3. Emergency management

Key points

The capacity of Councils to maintain statutory environmental health functions are 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.

Bushfire hazard management

Councils have specific responsibilities for prevention strategies under the Fire and Emergency Services Act and Regulations 2005. These include inspection and compliance activities together with contract management associated with:

- reducing hazardous vegetation;
- managing permits to light and maintain fires during the fire danger season;
- managing the District Bushfire Prevention Committee; and
- developing, monitoring and reviewing the District Bushfire Prevention Plan.

The capacity for Councils to continue their current bushfire management responsibilities may be compromised in a future where there is greater potential for more severe bushfires. An identified risk to Councils in this area is meeting the challenge of slashing vegetation as a result of non-compliance with a Section 83 Hazard reduction notice. This is compounded by competing objectives of public safety and native vegetation retention. Engagement with relevant authorities in the development of bushfire management is the key to successful adaptation.

Adaptation measures for Councils

- Undertake a review of the impact of the Bushfire Management Committee (established under Section 72A Fire and Emergency Services Act 2005) on Councils’ former bushfire prevention roles.
- Ensure that bushfire risk management is undertaken with a focus on open space and other community land that is vulnerable to bushfire.
- Ensure that bushfire risk management is undertaken to determine high-risk open space areas that present public safety implications.
- Review and update emergency management plans and relevant bushfire management action plans to ensure adequate consideration of the increased frequency and intensity of bushfires.
- Response and recovery planning for bushfire and coastal flooding.

Councils have a variety of infrastructure, personnel and equipment that have traditionally been identified by emergency management agencies as a resource pool under emergency management plans. Significant risks for Council are loss of service delivery and increased costs as a result of personnel, equipment and resources being used to:

- construct control lines and supply water, emergency management facilities and recovery services for bushfires.
- respond to coastal inundation impacts including traffic management or control measures for coastal flooding.
- Response and recovery to both of these climate induced events is a significant issue for Local Government, given forecasts for the increased frequency of these events. The most important measures for successful adaptation are to ensure that Local Government’s roles and responsibilities under the Emergency Management Act 2004 are clear, and that relevant agreements and plans exist for the provision of resources in response to bushfire and flooding incidents.

Integrating bushfire policy into Local Government systems

Australia has one of the most severe fire environments in the world, due to its climate, topography and vegetation. Bushfire is an annual hazard for Local Government and, in order to exercise its statutory responsibilities, is addressed through various risk management strategies in the context of prevention, preparedness, response and recovery under an emergency management framework. The forecasted increase in frequency, intensity and severity of bushfires, together with trends in more risk-averse state bushfire management policy, will undoubtedly flow into decisions and policy development at the Local Government level.

Adaptation to greater severity of bushfires in South Australia’s bushfire-prone environments will pose risk challenges to Local Government as Councils deal with increased service delivery levels for hazard management, asset management, provision of personnel, equipment and facilities for response and recovery, together with changes to human resource management, brought about by national and state bushfire policy. Currently, Local Government is intensively managing issues of staff occupational health safety and welfare, and meeting service standards during the declaration of catastrophic bushfire weather days. The key to success will be a thorough analysis of each Council’s capacity to deliver its services, together with appropriate consideration of all key business drivers to ensure that relevant frameworks are flexible enough to sustain the responsibilities of Local Government.

4. Sustainability and Environmental Management

Key points

- 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.

Biodiversity management

A number of Councils manage natural reserves, with some of these containing plants and animals of high conservation significance. These reserves often represent remnants of native vegetation that provide wildlife corridors between parks and reserves managed by the State Government and other entities. Regional natural resource management principles have identified the importance of landscape connectivity by linking habitats with buffer zones and corridors to reduce fragmentation. A reduction in the annual average rainfall and coastal inundation may impact on these areas by changing species composition and contributing to invasion of pest plant and animal species. Adaptation in these areas will require further partnership with relevant natural resources management boards.

Adaptation measures for Councils

- Ensure that amendments to development plans consider planning policy for retaining open space and other habitats to maintain biodiversity.
- Engage with the Natural Resource Management Board to gather appropriate information on techniques to support biodiversity during ongoing changes to the climate.
salinity. Observed lowering of water table levels and increases in public open space. In some cases, Councils have for Councils that use this water source for maintaining water management has become an increasing issue.

- Reduced average rainfall and increased periods of high weather events, especially heat related.
- Undertake an assessment of alternative water quality strategies 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 by increased temperatures and reduced rainfall. Sporting grounds and play grounds are at extreme risk of deterioration and declined use in future years as they may not be “fit for purpose” for parts of the year.

Safer Places and Heat Relief Refuges

Community expectations regarding Council facilities present cost implications for Councils in terms of upgrading existing facilities, establishing new facilities and altering services. Extreme temperature (heat wave) events have already demonstrated a change in community behaviour: people are seeking out cool and comfortable facilities such as libraries and civic centres to escape the heat. Successful adaptation measures will need to focus on providing these heat-relief facilities, whilst maintaining a reduced carbon footprint. Councils may need to re-evaluate the delivery of relevant support services, in order to maintain community health and wellbeing during extended visits.

Another trend that has cost implications is the provision of shade (natural or formed) for Council facilities where there is high visitation. In particular, a high-risk exposure for Councils is the public safety of playground equipment and meeting community expectations for shade in other areas of community land, such as sporting grounds and swimming pools.

Adaptation measures for Councils

- Consider Local Government’s role within the State Government Extreme Heat Policy to identify where Council facilities may accommodate and adapt to community expectations.
- Review Council asset management plans and update with relevant criteria and standards for enhancing health and wellbeing during extreme heat events.
- Undertake a needs analysis of Council facilities that identifies existing equipment and plans for procurement, or retrofitting of, relevant equipment and infrastructure.
- Review Council open space and playground strategies and initiate a consultation process to determine community expectations with regards to natural and artificial shade structures at public open space, playgrounds, sporting fields and other relevant Council facilities.
- Amend Council procurement requirements to reflect urban design principles that acknowledge extended heat periods.
- Review outcomes of the LGA initiated Tree and Tree Activity project in relation to public safety and natural shade benefits.
- Review Local Government’s participation in State Government initiatives (i.e. Red Cross ‘Emergency ReadPlan’, Cancer Council SA ‘SunSmart’ program and similar programs), to explore opportunities for integration into Council operations.

Playground Design for Extreme Heat

Liability claims arising from injuries sustained by users of playground equipment present an ongoing risk management issue for Local Government that is likely to be exacerbated by extreme heat events in the future. There has been widespread evolution in materials used in the construction of playground equipment, with manufacturers reducing the amount of metal surfaces and replacing these with plastic and rubber. Unfortunately, these changes have not necessarily achieved the desired results with the surfaces producing enough conductive heat to cause potential burns to users. In addition, rubberised soft fall beneath the equipment also conducts a considerable amount of heat.

A paradigm shift is needed to adapt to a future extreme heat environment and to reduce liability claims in this area. Councils must consider the management of playground equipment and areas by increasing the cover of shade, naturally and/or by erecting shade structures. Future adaptation may be better served by active engagement with manufacturers and engineers to incorporate suitably visible labelling into the structures so that users/guardians are warned of the safety aspects of the equipment. This strategy would benefit Councils by saving costs associated with erecting warning signs for individual pieces of equipment.

Community Land Management

Significant risk has been identified with recreational turf areas and community land as a result of the loss of condition of turf and vegetation arising from the combined effects of reduced average rainfall and extreme temperature. In particular, the main risk issues are associated with maintaining sporting grounds in a “fit for use” state and ensuring that the aesthetics and amenity of open space meet community expectations. Each of these risks has significant implications in terms of safety and cost.

Adaptation measures for Councils

- Review Community Land Management Plan to consider public perception and expectations in relation to open space issues in an extreme weather climate.
- Assess current and future open space utilisation in light of projected increases in extreme weather events.
- Review and update asset management plans to include the impacts of climate change as a key strategic plan initiative.
- Develop policy and assessment criteria for the aesthetics, amenity and environmental value of open space and link to asset management planning.
- Undertake continuous improvement of native plant species selection by monitoring ongoing condition and growth and investigating further application of arid zone plants.
- Undertake a review of existing planting policy to include an impact assessment of surrounding heat absorbing structures that have the potential to impact on the health and survival of new plantings.
- Undertake research into Federal and State Government and other recognised trials on horticultural techniques for the Adelaide Plains.
- Establish a ‘Water Sustainability Alliance’ to develop Local Government sector principles, systems and approaches to water sustainability with an emphasis on the integration of water capture, waterproofing and reuse across the region.
- Develop and implement an integrated water resource management plan for sustainable development.
to allocate and monitor the district/regional water resources in the context of economic growth and environmental management.

6. Health and wellbeing

Key points
• The capacity of Councils to maintain statutory environmental and health-related functions is likely to be challenged by increases in extreme weather events.
• Partnering with Federal and State Governments and other recognised support agencies is essential for maintaining service delivery of community care and other programs during extreme weather/emergency situations.
• Compliance with Occupational Health Safety and Welfare (OHS&W) responsibilities with respect to Council members, employees and volunteers remains a high priority.

Health Inspection and Disease Management
Councils’ roles and responsibilities with regard to the Food Act 2001 and pest and vector-borne disease management are expected to be challenged by predicted increases in extreme weather events. Rural Councils in particular, have consistently identified significant risk with meeting their requirements under the Food Act 2001. Demand on Councils’ resources to meet the statutory responsibilities to undertake more routine auditing of food premises and response to disease outbreaks is expected to be unsustainable in a future climate. The severity of the situation with some rural Councils is highlighted by their inability to attract and retain qualified environmental health officers. At present, adaptation measures include increased delivery of education to food premise operators and the establishment of emergency response plans with neighbouring Councils to share delivery of services during high-demand periods.

The abundance in new pest species such as European wasps and vector-borne diseases such as Ross River Virus and Malaria is another common intolerable risk that wasps and vector-borne diseases such as Ross River Virus and Malaria are expected to be a significant risk with predicted increases in extreme weather events. The severity of the situation with some rural Councils is highlighted by their inability to attract and retain qualified environmental health officers. At present, adaptation measures include increased delivery of education to food premise operators and the establishment of emergency response plans with neighbouring Councils to share delivery of services during high-demand periods.

Adaptation measures for Councils
• Develop, in conjunction with other authorities, an environmental health strategy for the long-term management of vector-borne diseases.
• Identify and complement public education and awareness programs for reducing illness from vector-borne and other diseases.
• Engage with the LGA (and relevant Federal and State Government agencies) to ensure sector-wide understanding of the potential implications of climate change on the delivery of immunisation services and other public health requirements and to secure ongoing funding to meet community needs.

Home and community care
The Home and Community Care (HACC) program is a joint initiative between Federal, State and Local Governments that provides domestic assistance, personal care, transport and nursing services, in order to support vulnerable persons (and their carers) to be more independent, thereby reducing the potential for premature admission to supported residential care. Increases in extreme weather events will have an impact on Councils in terms of maintaining quality care in the face of increased demand for the range of services, together with the potential for increased liability in the event of heat-related health issues arising whilst providing the service. Adaptation measures have focussed on undertaking risk assessments of the functions performed, adjusting scheduling and introducing further mechanisms to ensure recipients are safe and properly supported.

Adaptation measures for Councils
• Engage with the LGA (and relevant Federal and State Government departments) to ensure equitable funding and the development of a consistent HACC service delivery model for the sector.
• Engage with the LGA to ensure state-wide consultation in the development of a strategic direction regarding the provision of services to vulnerable groups during extreme weather events.
• Undertake an analysis of Council’s capacity to deliver emergency response and recovery services for extreme heat events and partner with relevant authorities/ agencies where appropriate.
• Engage with relevant providers including contractors to ensure climate change is considered in their business planning and incorporated in strategies for vulnerable groups.

Employees, volunteers (and other officers): safety and welfare
Climate change will impact on the occupational health and safety for food premise operators and other officers face while under-taking their work-related tasks. These hazards are not limited to the outdoor workforce but extend to those who are accustomed to working in a controlled environment. Councils will need to consider the safety of their staff and others in the review and implementation of OHS&W policy, procedures and plans, together with diligent asset management planning, to provide the infrastructure and systems that ensure acceptable working environments. Investment at this level has the potential to be offset by reducing time lost as a result of staff and volunteer absences.

Adaptation measures for Councils
• Review and update inclement weather policy to establish a coordinated redirection of outdoor staff/ volunteers to cool locations and/or to undertake alternative work.
• Consider extreme heat events as a variable for business impact assessment as a component of business continuity planning.
• Consider the development of seasonal focussed outdoor staff training program that can be successively implemented during extreme weather event periods.
• Review outdoor staff personal protective clothing to ensure safety and comfort during extreme weather periods.

7. Council Prosperity

Key points
• 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.

Council viability
The capacity of the land to sustain production, particularly in the agricultural, horticulture, viticulture and wine industries may impact on Council’s capacity to sustain services over the longer term. Some Councils have acknowledged that reliance on an industry with a single focus may threaten long-term sustainability - in particular, employment and tourism - for economic growth. Whilst these industries are responsible for their own risk management and adaptation when it comes to climate change, it is important that Councils take a partnering approach for the development of short and long-term planning. Partnerships developed to address these issues will ultimately lead to community-based adaptation, better decision making, enhanced resilience and ultimately economic growth.

Adaptation measures for Councils
• Partner with relevant stakeholders, including the LGA and State Government to advocate for appropriate research on the impacts of climate change on the viability of the industries that Councils may rely on for ongoing sustainability.
• Implement an industry engagement strategy to lead, support and partner climate adaptation strategies within the community.
• Monitor and review relevant information on the sustainability of industry and adjust planning controls to enable efficient industry adaptation and to forecast the rezoning of invaluable land.
• Continue to work in partnership with the SA State Government to progress the 30 Year Plan for Greater Adelaide.

Financial sustainability

Introducing adaptation measures into Councils’ strategic management and business plans will have an impact on Councils’ budgets. Cost has been identified as key risk impact area, mainly due to the influence that this has on the management of assets/infrastructure. Councils will require more rigorous financial risk assessment to successfully address the impacts of climate change.

Adaptation measures for Councils

• Ensure long-term financial plans consider increased costs caused by climate change factors.
• Undertake a review of Council fleets and, where practicable, develop plans to convert to alternate energy efficient vehicles.
• Incorporate a program to update the energy and water efficiency of Council-owned buildings into the review of Council asset management plans.
• Establish a building asset renewal plan that triggers a cost-benefit analysis of actions to improve energy and water efficiency at each point of the building life-cycle.
• Set minimum standards for controlled environment efficiency and performance.
• Review financial procedures to incorporate the ability to monitor increased costs resulting from climate change.

Adaptation Risk Treatment

Following an analysis of the CAP data, the list of risk treatments in order of priority, continue to be delivered to Local Government via LGA (policy) and the LGAMLS/WCS (guidelines and implementation).

The risk treatments include by necessity, the identification of opportunities resulting from the CAP data analysis:

• Recommendations for amendment to legislation to assist Councils to acknowledge the perceived liability risk/impacts of climate change (response to ALGA’s report by Baker & McKenzie);
• Development of clear, concise, effective communication network for delivery of consistent emergency messages;
• Review of insurance options for better fiscal management of assets, infrastructure as result of natural disasters in line with ALGA and Insurance Council of Australia review;
• Independent Inquiry into Management of Trees on Road Reserve, Community Land;
• Engagement, development and implementation of High Danger Days guidelines;
• Development of sector based, tailored Financial, Business, Strategic and Asset Risk Management framework;
• Partnership with State Government entities (ZEMC, NRM Boards, SAPOL, SAFECON, SAICORP, DENR) to integrate Regional risk management plans based on CAP outcomes (Regional Disaster Resilience Programme);
• Processes to integrate and complement Local Government (community leader) Emergency Management plans into State Government (hazard leader) Emergency Management Plan (River Murray Slumping, Flooding, Bushfire, public health and safety, asset management, resource sharing, communication) risk identification, action and prevention;
• Enhancements to the Planning Kit to recognise legislative impacts for development and planning; and
• Integration of One System model (OHS system tailored for LG Employees and Volunteers that includes recognition of Council’s CAP outcomes).
ASSOCIATED LGAMLS PROJECTS AND INITIATIVES

As a direct result of the information obtained from the CAP and recognising the likelihood of increasing frequency of natural disasters including extreme weather events, flooding and bushfires, the LGAMLS has directed significant resources to support the sector. The following initiatives have developed either directly or as complementary to the outcomes of the CAP and highlight the whole of sector approach able to be implemented by the LGAMLS.

Regional Disaster Resilience Programme

At the December 2011 LGAMLS Board Meeting, it was resolved to develop a risk based Regional Disaster Resilience Programme (RDRP) for immediate and consistent delivery across Local Government, via a regional approach. The Board also resolved to provide significant funds to deliver this RDRP consistently at no cost to LGAMLS Members.

In accordance with the climate risk profile developed from the CAP data, failure on the part of Local Government to implement risk reduction and/or mitigation strategies relevant to the impacts of natural disasters, has the potential for attracting civil liability claims.

In accord with the principles of the Commonwealth Government’s charter that “…existing collaborative relationships between Councils, regions, governments and other stakeholders must be improved to support the enhanced understanding of perceived hazards and risks…”, the LGAMLS is working in partnership with key stakeholders. This partnership will ensure the delivery of the RDRP for local government complements, and is in step with, the elements of the South Australian Government’s more recent National Strategy for Disaster Resilience (Feb 2011) and includes COAG’s National Disaster Resilience Statement.

Important aspects of this strategy include:

- A coordinated and co-operative effort by all stakeholders to enhance Australia’s capacity to withstand and recover from emergencies and disasters resulting from large scale and devastating natural disasters.
- A disaster resilient community is one that understands and manages the risk it confronts. Disaster resilience is a collective responsibility with a united focus and shared sense of ownership.
- Local Government as the community leader has a significant role in developing and implementing its own effective, risk based natural disaster management planning that supports and complements the most effective well-coordinated response from emergency services.

The SA State Government has a State Emergency plan for which Local Government, in its statutory role, plays an essential part. To recognise this role, the State Government has created (regional) Zone Emergency Management Committees (ZEMC). The ZEMC has no defined crisis management role; it has a separate strategic planning role and function and therefore has no operational role during an emergency.

The success of the ZEMC therefore relies on each participating Local Government region having (and implementing) its own Emergency Management Plan relevant to its statutory role. The LGAMLS’ experience via the CAP, is that Councils need assistance (including financial) with the development of a relevant risk framework and support to implement its Regional plans, in accordance with the National Strategy for Disaster Resilience.

The LGAMLS has the capacity and ability to develop and deliver a robust, tailored and consistent RDRP across the State that will include implementation with relevant stakeholders, not limited to the ZEMC, the State Government’s Emergency Plan and the Commonwealth Government’s more recent Disaster Resilience programme.

Framework

The LGAMLS programme is designed in accordance with part 3.2 of the National Strategy for Disaster Resilience.

This section headed “3. What Action Can We Take”, outlines that in order to underpin a disaster resilient community, there must be knowledge and understanding of local risks:

- “By understanding the nature and extent of risks, Council can seek to control the risks, inform the way Councils can prepare for and recover from the natural disaster.
- “Existing collaborative relationships between regions, governments and other stakeholders must be improved to support the enhanced understanding of perceived hazards and risks. Councils need to place more attention on improving the integrity of information and data sharing to determine what information is most useful to be communicated to stakeholders and communities.”
- “When communicating information on hazards, risk and risk management measures Councils need to consider how stakeholders and communities might react. Natural disasters are inherently unpredictable as can be the responses.
- “Local Government needs to obtain more consistent information on the costs and benefits associated with risk management, asset management, and disaster impacts to build a credible evidence base for prioritising and targeting interventions as well as risk reduction and risk mitigation measures.
- “Such information must extend to simple risk based assessments that include the full scope of social, built, economic and natural environments.”

To achieve these outcomes the LGAMLS RDRP is designed to include:

- “The collation of CAP data and risk assessments from each Council within a Region to use as a base for a programme of (whole of region) risk assessments to consider risk, vulnerabilities and capabilities across the Region’s social, economic, built and natural environments;”
- “The development of consistent methodologies and data frameworks for each Region, to be applied in risk and disaster impact assessments to ensure effective information sharing, integration into State government and Commonwealth Government for accurate interpretation;”
- “Processes that ensure the outcome of the programme is accessible and available for use by individual Councils in each Region to undertake risk management planning, identified mitigation works and cost analysis;”
- “Ensure partnerships are in place (Regions, Councils, LGA, SAICDRP, SAFECON, LGAMLS, LGAWCS, LGAMAF) which support improved access to risk information and more effective collaboration in assessing risks, assets, infrastructure and natural disaster insurance issues common across State, Regional and Council boundaries;”
- “Develop and install strong communication networks across government sectors and Councils that fill information gaps, share information/resources and build understanding at all levels;”
- “Develop a SAFECON/Local Government communication process to ensure the integrity of emergency messages that are capable of being delivered timely, clearly, appropriately and importantly, consistently.”

The RDRP is now underway in the Riverland Region with all Councils in the region “engaged” and each Council now individually undertaking the Risk Management process.

The basis of RDRP is to:

- Focus on Council’s roles and responsibilities as Community Leader and pursuant to the Emergency Management Act;
- Align and link the National Strategy for Disaster Resilience zone level planning;
- The development of consistent methodologies and data frameworks for each Region, to be applied in risk and disaster impact assessments to ensure effective information sharing, integration into State government and Commonwealth Government for accurate interpretation;
- Adopt an effective process that is consistent with a risk management framework for the entire sector.
In addition to the Riverland Pilot region, the engagement process has commenced in the metropolitan area and Eyre Peninsula. We aim to complete the RDRP across the state by June 2013.

Summary

Natural and other disasters have continued to strike Australia randomly and aggressively over the past 5 years. Apart from the (unable to be quantified) emotional grief and despair a disaster will leave with a community, the costs relating to infrastructure and assets damage continues to be overwhelming. The Insurance Council of Australia is quoting damage costs relating to flooding alone over the period December 2010 to January 2012 impacting on Queensland and Victoria, in the vicinity of $3.68 billion – and these costs are only representative of insured losses.

Both State and Local Governments are being called to account to have in place robust mitigation plans based on identified local risks. The application of mitigation plans will impact not only on the cost of disasters but more importantly assist local communities to build resilience.

The LGAMLS is able to provide Local Government with a tailored RDRP, framed upon Risk Management Standard ISO 31000, which is capable of being delivered consistently across the industry, at no cost.

The RDRP will ensure that Local Government is provided with a consistent approach in relation to disaster impacts and to build a base for prioritising and targeting interventions within a risk based framework. The RDRP will underpin Local Government as the Community Leader.

River Murray Levees

As a result of the extreme flood events in the latter part of 2012 and early 2011, the River Murray riparian Councils identified critical risk and emergency management issues relating to the potential for extreme localised flooding. As floodwaters moved rapidly south causing unprecedented flushing of the Murray-Darling Basin catchment, which feeds the River Murray, the risk of flooding in South Australia increased.

In February 2011, the Remark Shire Council expressed concern about the impact of levees constructed along the River during the previous drought period. The purpose of the (private and State Government constructed and owned) levees was to divert water during a period when the flow was substantially decreased.

Given the potential for record high flow levels of the River coming to 2012, the levees would have the effect of diverting flood waters into built up and occupied non-flood areas. Further, slumping issues could have impacts on privately constructed levees to withstand the high water levels.

With respect to slumping specifically, there is nothing in legislation that gives a Council statutory powers to act in an emergency situation relevant to its role as a sink; as set out in the SA Government (River Murray Slumping) Hazard Management Plan (Hazard Plan). This relates to issues such as the closing of roads identified as subject to slumping, evacuating or evicting land owners/holders for the dwellings prone to the impacts of slumping, being responsible to arrange alternative accommodation for permanent residents of dwellings sited on the banks of the River Murray, etc.

From a LGAMLS and liability management perspective, the suggestion is that Hazard Management of the River Murray slumping should not be treated any differently to other States/Local Government hazard/emergency. Current legislation puts the various State Government entities as the emergency leaders. The role of a Council in relation to any hazard/emergency should be consistent so that there is no confusion (between all other authorities, emergency service providers, community) or in a situation where a Council may not be in possession of all the required knowledge to manage one particular hazard over another.

The Riparian Councils and the LGA communicated with the Minister responsible for the Department for Water regarding ownership and maintenance responsibilities for levee banks along the River. The Minister responded to the LGA in July 2011 to the effect, that the relevant Council was the responsible entity.

The flood embankments were constructed in 1956 with State and Commonwealth funding, as part of flood protection works. In 1959 an “exchange of letters” transferred the responsibility for the ongoing maintenance of flood embankments to the relevant Council.

The State Government expressed the view that more recent legislation (Local Government Act 1999) set out that a Council’s hazard mitigation functions and powers pursuant to the Act, most likely extended to ensuring the levee banks in each local area were adequate – including levee banks owned by or in the care, control and management of the relevant Council.

This assumption of transfer of ownership and management was questioned by the Riverland Councils, especially as current legislation does not extend to giving Councils powers to manage, control or alter Crown land or privately owned land attached to the River Murray. The LGAMLS sought legal advice in relation to the potential liability for Councils and confirmed – there is no positive duty on Councils to extend to giving Councils powers to manage, control or alter Crown land or privately owned land attached to the River Murray. The LGAMLS sought legal advice in relation to the potential liability for Councils and confirmed – there is no positive duty on Councils to extend to giving Councils powers to manage, control or alter Crown land or privately owned land attached to the River Murray. The LGAMLS sought legal advice in relation to the potential liability for Councils.

The LGAMLS Board resolved to provide funding assistance to support a coordinated approach between the Department of Water, the River Murray Riparian Councils, the LGA and the LGAMLS to identify and manage infrastructure issues related to levees. Factually:

- There appears to be a greater extent of levee banks on State Government and private land than on Local Government land.
- Power to enter River Murray land as defined in the River Murray Act 2003 is restricted.

Power to enter River Murray land as defined in the River Murray Act 2003 is restricted.

- Pursuant to S298 of the Local Government Act 1999, a Council can only exercise emergency powers to enter River Murray land in the event of a flooding event and not in anticipation of flooding.

- Availability of historical and trend flood mapping details will be required for identification of an accurate risk profile.

- In support of a collaborative approach, riparian Councils under the direction of the LGA are prepared to undertake a survey and condition assessment of existing river bank levees on Council land.

Levee Bank Management Strategy

The Department of Water advised the strategies employed by the State Government (as the leading Agency) in managing potential flooding issues that could occur and this included response actions and the management of certain infrastructure. Inundation mapping and modelling has resulted in the risk of flood rated low to medium. The following provides an outline of the Department of Water’s strategy to manage levee banks:

- Condition Assessment
- Risk Assessment (flood mapping)
- Preparedness (e.g. location of fill etc.)
- Access Requirements (e.g. easements)
- Construction / Repairs needed
- Maintenance
- Education, Responsibilities, Evacuation Plans

Total levee bank regeneration is estimated to cost in the order of $230m – an amount unlikely to be secured in the present budgetary circumstances.
Council Priorities

The Councils provided that the current state of levee bank condition has not been clearly determined. Renmark Paringa has identified that approximately $4m in works is required to fix levees in that region. The Council advised that it was awaiting the results of the NDRP application for funding.

As a result of discussions:

- The LGA offered, on behalf of Councils, to undertake a survey and condition assessment of River levee banks on Council land (and possibly State and private land – subject to the funding);
- Department for Water to finalise flood mapping details for the relevant section of the River (including lower Murray) by late 2012;
- As part of a risk management strategy, Council surveys and Department for Water flood mapping to be overlaid to produce a flood risk map which will form the basis for long term risk management plan to address all issues, not limited to preparedness, access, land ownership, infrastructure, design, repair and maintenance.

To ensure funding is appropriately allocated, the Riparian Council CEOs together with the LGA and LGAMLs further discussed current priorities facing the Councils.

It was also agreed that the development of a well-coordinated Communication Strategy (in consultation with stakeholders) is essential to support the whole of River management – including flooding, slumping, emergency response, infrastructure assessment, tree management, development requirements and information dissemination. An adequate communication strategy extending to include both tiers of Government and other stakeholders of the River Murray and surrounds is an essential feature to assist impacted communities with the provision of clear and accurate information.

The Department for Water has advised that on completion of up to date inundation mapping data, it will work with the River Murray Riparian Councils to assist in identifying assets that will be deemed “at risk”.

Coastal Management

This project has recently been completed with the release of the Guide to Coastal Management for Local Government (“the Guide”). Some of the issues around the management and access to coastal assets and infrastructure emerged directly from those Councils with coastal frontage engaged in the CAP. These issues ranged from the potential for small communities to be isolated in the event of a disaster event to the ongoing coastal frontage engaged in the CAP. These issues emerged directly from those Councils with the management and access to coastal assets and infrastructure.

The scope of this Project has been:

- To undertake a stock-take of Council and other government entities occupation, ownership and responsibilities across the coast including current systems in place to manage the area;
- To implement a risk based management strategy to assist Local Government manage the coast, including both natural and man-made risks/hazards vested under the care, control and management of Local Government.

The key Project outcomes were as follows:

- Liaison with identified stakeholders such as Councils, the LGA and State Government in relation to current (risk based) practices and assess their applicability across the sector.
- Investigation and understanding the current areas under the control of Local Government and the issues associated with the management of the coast and its related infrastructure (legal advice to be part of this core element).
- Consideration of the impact of the (sector) Climate Adaptation program outcomes relevant to vulnerability of the coastline caused by extreme storm events, sea surge, sea level rise, etc.
- Creation of, in conjunction with the sector, a risk management based guidance tool that will offer assistance and consistency for the future management of the coast (including training).

The following issues were considered as part of the scope of the project and formed the basis for the development of the Guide:

- General Access/Egress points;
- Role of the Coastal Protection Board, Native Vegetation Council including funding arrangements;
- Stock take of infrastructure such as roads, walking trails, rest areas, information centres, viewing platforms and outdoor furniture;
- The location and role of signage;
- The issue of “illegal” access to undeveloped (natural) locations across the coast and in particular the cliff edge

The Guide has been developed to assist Local Government manage their assets and infrastructure along the coast. While each Council area may face risks specific to their natural environment, there needs to be some consistency across the sector and it was with this in mind that the need for such a Guide was identified and facilitated by the LGAMLs. The intention of the Guide was not to comprehensively analyse all risks associated with the extensive South Australian coastline, but rather to provide an overview of the types of risks which should be considered and managed.

By utilising this Guide to assist in the development of local and regional strategies for their coastal land and asset responsibilities, Councils will ensure they are managing and minimising the inherent risks associated with the natural and built coastal environment.

Tree Management

The LGA, in conjunction with the LGAMLs, conducted an independent review into the management of trees located on land under the care and control of Councils. The independent Inquiry into the Management of Trees on Public Land (the Inquiry) was therefore initiated to provide independent advice to the LGA on the most appropriate future management regime for trees on public land taking into account current and possible future changes in climatic conditions.

The need for the Inquiry was identified following a surge in the number, and associated costs, of incidents/claims where trees on public land have caused damage to property and people, including some with fatal consequences. Many of these incidents could be directly attributed to the prolonged drought leading up to 2010 combined with extreme weather events. Tree management is one of the key sector wide issues particularly given the future predicted variations in climatic conditions identified in the CAP. Given trees are also an important and valued community asset, trees on Council managed public land (especially footpaths and road verges) present a particular challenge to achieve a balance between environmental and public safety considerations.

Scope of the Tree Inquiry

The following summary sets out the scope of the project, including the establishment of a panel of qualified persons to assist to undertake an independent review:

- Provide advice on the implications for tree health and future tree management based on relevant scientific analysis of the actual experience of the recent drought conditions in SA and predicted future changes in climatic conditions.
- Provide comments on any implications for the owners of trees on private land arising from the scientific analysis within the current legislative framework relevant to tree management;
- Provide comment on the “financial value” of trees in context of Council assets.
- Identify (and where possible quantify) the liability issues for Local and State Governments arising from the scientific analysis;
- Provide advice on the range of community attitudes on the role of trees on public land, especially footpaths and road sides, in terms of amenity, biodiversity, public safety and other relevant factors;
- Review the current guidelines for tree selection, planting, location management and removal for Councils (and other public authorities where relevant) and make any recommendations for change taking into account the findings of the investigation;
- Make recommendations for legislative change required as a result of the investigation particularly considering the Local Government Act, Development Act, Native Vegetation Act and the Civil Liability Act
- Make recommendations of the development of a “Trees in the Public Landscape” policy for consideration by the LGA and possibly the State Government;
- Identify the possible resource implications for Councils arising out of any findings and recommendations; and
- Make recommendations on any public/community education and information that should be developed regarding trees on public (and private) land.
A sector approach to Tree and risk management

The Recommendations emanating from the Report could not be implemented generally or “as a whole” without a further risk management assessment and consultative stock take process.

Whilst various Recommendations have merit (or are already currently being practiced), the sector requires a risk management approach that considers not only the physiological aspect of the tree but also the legislative requirements and community expectations.

As with any function or service being undertaken by a Council, the management of trees needs to be considered from a resource perspective given the circumstances including what is appropriate in a particular location.

There continues to be further analysis (in collaboration with the LGA and the sector) of what is prudent for Local Government from a risk management perspective and ensuring compliance with current and future legislative frameworks.

In addition to the Inquiry, recent legislative developments, particularly the revised Development Act Regulations (Regulated Trees) have impacted on the management of trees. Considering the change in the legislation, and in relation to feedback arising from the Tree Inquiry, the Trees: Legislation and Risk Management Guidelines for Local Government has been reviewed from a legislative perspective.

The risk management strategies to deal with the complexities surrounding tree management in Local Government are being considered in consultation with the sector. The Guidelines will include generic templates such as a “Tree Management Policy” for a Council to utilize.

Further to the above, risk based assistance for managing trees has been considered by:

• Reviewing the Local Government Planning Kit (“the Kit”) (undertaken by an independent planning expert). The Kit has been revised to include the requirements of the Development Regulations referencing the new tree criteria and risk based tools from a practitioner’s perspective.

• Whilst the Kit is available interactively on line, a new refined “IT” based platform to be available to provide the revised Kit in a practical and efficient manner.

• General Tree Management Forums have taken place in the metropolitan and regional areas.

• The LGAMLS provides representation at the Training and Education Forums provided by the LGA.

Further training and education will be provided for the revised Guideline which is expected to be released July 2012.

Planning Kit

The Local Government Planning Kit (“the Kit”) continues to be reviewed to ensure that it considers the full scope of the legislative framework, whilst arming the Planning Practitioner in Local Government with information that they need to consider. The Kit is “organic” in nature, with the ability to be expanded to capture Local Government’s evolving responsibilities in the Planning and Development environment.

A fundamental feature of the Kit is its capacity to be used as a stand-alone tool from an information basis, but also its ability to be incorporated into the risk and adaptation processes that form part of an individual Council’s Framework.

The Kit has the flexibility to ensure that it gives consideration to the operational and strategic requirements that will have an impact on development and planning, whilst being an effective internal training and induction tool for Local Government employees and the education sector.

The Kit is an effective, easy to use tool, linking with information that is required both internally and externally to sites such as the EPA.

Access to the Planning Kit is via the LGA website. Simply type “Planning” into the site’s search engine.

Uncertainty is a Reason for Flexibility and Creativity, Not for Delay

Of all the world’s developed nations, Australia is the most exposed to extremes. Since commencing the CAP in 2009, the storms and flooding of December 2010/January 2011 alone caused economic losses of $8.6 billion and insured losses of $4.3 billion.

The increasing exposure of Australia to climate events in future will occur in many different ways, with differing effects across locations, and with varying consequences for local government and communities.

Some examples of the increased climate risks include:

• More than $226 billion of current residential, commercial, road infrastructure and assets in coastal areas are potentially exposed to inundation and erosion hazards, in event of a sea level rise of 1.1 metre.

• Bushfire risk is expected to increase strongly in south-east Australia with the number of very high and extreme fire danger days growing by 15-70% by 2035.

• Lower rainfall in southern Australia is projected to substantially reduce water availability (impacting on population growth and economic development in areas)

• Heat waves are forecast to become more frequent and intense, with the number of very hot days (over 35°C) in major Cities doubling by 2035. This will have consequential effects amongst other things on Councils’ services and resources, infrastructure performance, housing design and urban planning.

Australia needs to commence preparations now to address these future climate challenges. Adaptation planning and implementation to cope with the growing effects of climate change will enable Australia to reduce negative impacts and to take advantage of any positive effects.

Creativity, Not for Delay

The Increasing Climate Risks

Climate change will have negative and positive effects. Australia needs to understand and plan for these effects.

The increasing exposure of Australia to climate events in future will occur in many different ways, with differing effects across locations, and with varying consequences for local government and communities.

Some examples of the increased climate risks include:

• More than $226 billion of current residential, commercial, road infrastructure and assets in coastal areas are potentially exposed to inundation and erosion hazards, in event of a sea level rise of 1.1 metre.

• Bushfire risk is expected to increase strongly in south-east Australia with the number of very high and extreme fire danger days growing by 15-70% by 2035.

• Lower rainfall in southern Australia is projected to substantially reduce water availability (impacting on population growth and economic development in areas)

• Heat waves are forecast to become more frequent and intense, with the number of very hot days (over 35°C) in major Cities doubling by 2035. This will have consequential effects amongst other things on Councils’ services and resources, infrastructure performance, housing design and urban planning.

Australia needs to commence preparations now to address these future climate challenges. Adaptation planning and implementation to cope with the growing effects of climate change will enable Australia to reduce negative impacts and to take advantage of any positive effects.

Access to the Planning Kit is via the LGA website. Simply type “Planning” into the site’s search engine.
CONCLUSION

Adaptation consists of actions undertaken to reduce the adverse consequences of climate change, as well as to harness any beneficial opportunities.

National Climate Change Adaptation Research Facility

The continuing benefits to the Local Government sector from the LGAMLS Climate Adaptation Programme and related initiatives will ensure that the sector and all stakeholders can work towards a consistent and united strategic approach to climate adaptation, to build resilient communities capable of adjusting to the perceived impacts of climate change.

98% of all Councils in South Australia will have completed the CAP. Those Councils have undertaken climate adaptation risk assessments in order to build the platform upon which to develop adaptation action plans and implement adaptation measures.

This process has identified a number of potential barriers that may limit local government’s ability to plan for, and implement, adaptation measures. These are not unique to adaptation and are barriers to effective service delivery by local government in the current climate.

- There is a lack of clarity regarding the roles and responsibilities for adaptation of councils, including in the areas of land-use planning, infrastructure/assets and emergency management.

- Many Councils do not have the capacity to effectively plan for and implement adaptation responses — most face financial constraints and shortages of resources, including professional and technical expertise.

- Legal liability uncertainty and concerns appear to be hindering adaptation for many Councils.

Via the LGAMLS, coordinated and collaborative risk based initiatives designed for Local Government will assist to address some of the capacity constraints currently emerging. This is already occurring through the establishment of the projects identified from the CAP outcomes aimed at being delivered:

- Regionally and/or in partnership with stakeholders (i.e. LGA, State Government Agencies, LGAWCS, LGAMFF, Insurance Industry);

- Efficiently by undertaking common activities or joint activities such as data, information and resource sharing; and

- Cost free as a financial benefit of membership to the LGAMLS.

This united, whole of sector approach to Climate Adaptation, led by the Local Government Association, has placed Local Government in South Australia in a strong position to continue to build a resilient community prepared to meet the future impacts of climate change.

I love a sunburnt country,  
A land of sweeping plains, 
Of rugged mountain ranges,  
Of droughts and flooding rains. 
I love her far horizons,  
I love her jewel-sea,  
Her beauty and her terror -  
The wide brown land for me!

Dorothea Mackellar
Extract from poem “My Country” first published in 1908