

Climate change adaptation: Briefing note 5

Local government executive

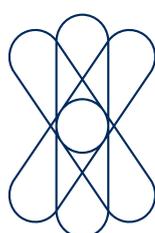
Who might this be relevant for:

Local government CEOs,
General Managers,
Senior Managers

Climate change has the potential to impact many aspects of life and business in Australia. Climate change is not just a 'green' issue, but has many significant social and economic implications. Local councils will be at the frontline of responding to climate change threats. In coastal areas, their communities will have high expectations regarding management of the impacts of sea level rise, threats to council infrastructure and increasing risks from extreme climate events. Adapting to climate change may also bring new opportunities and innovation including improved designs and new technologies, to build and strengthen new partnerships and make cost savings.

Table 1: Summary of climate projections and impacts. Developed using information from CSIRO and Bureau of Meteorology, Climate Change in Australia website (<http://www.climatechangeinaustralia.gov.au/>) [Accessed 13 May 2016].

Type of change	Timeframe/ certainty	Projections	Impacts relevant to your sector
Temperature change	Immediate changes High confidence	Average temperatures to increase by between 2.6 and 4.8°C by 2100	Health impacts on constituents (e.g. increased disease risk), increased demand for cooling technology including green infrastructure, increased running costs for council facilities.
Extremely hot days	Immediate changes High confidence	More than twice the number in some cities	Major disruptions to services (e.g. electricity, transport), major health crisis, loss of life, more days too hot for outdoor workers.
Fire weather	Immediate changes High confidence	Increased frequency and severity of extreme fire danger. Greatest risk in south-eastern Australia	Greater risk of damage and loss to fire, greater demand for fire preparation. Risk of loss of life. Greater resources needed for fire preparation, controlled burning and emergency services. Need for new infrastructure guidelines.
Sea level rise	Mid century High confidence	Projected to rise by as much as 0.52 to 0.98m by 2100 bringing increased risk of coastal flooding during storms	Increased erosion and threat to property and infrastructure during storms, long-term risk of more frequent or permanent inundation of housing. Considerable resident concern.
Rainfall extremes	Mid century Medium confidence	Extreme rainfall events or higher rainfall intensities likely to become more common in throughout Australia, and droughts are expected to be more intense and more frequent in southern Australia	For areas already flood prone, property and infrastructure will continue to be at risk of flood damage with long-term outlook of possible worsening. Droughts ongoing. Potential impacts on water supplies and infrastructure.
Storms and cyclones	Mid century Medium confidence	Fewer extreme storms but increased intensity	Areas prone to cyclones and windstorms will continue to be at risk of damage and losses. Changes



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Adaptation:

Action to limit the negative impacts of climate change and take advantage of any opportunities

What climate change may mean for your sector

Local governments may experience climate change impacts across the whole organisation with potential for costly damage to major infrastructure, disruption to activities and increased work and maintenance programs. There may be impacts on the health of staff, threats to the properties of householders and safety. This may require trade-offs in decision making. Some of the impacts and challenges for local governments include:

- **Extreme events become a greater risk** More extreme heat waves, more severe bushfires
- **Many climate change impacts have the potential to be very costly** For example the Federal Government has estimated the cost of replacing residential buildings potentially at risk of inundation from a 1.1 metre sea-level rise at up to \$63 billion¹. Costs may also include increasing maintenance and repair costs, early replacement cost of failing major infrastructure and loss of productivity through loss of services (e.g. power) or worker down time (e.g. extreme heat days).
- **There are likely to be ‘winners and losers’ under climate change** In reducing the impact (i.e. adapting). It is likely trade-offs will need to be made. For example if a sea wall is built to protect residential properties, it may change the amenity of a beach and impact on natural ecosystems.
- **Increased responsibility for adaptation actions by local government** Adaptation means diverting resources to dealing with impacts and problems that may not manifest for several decades. For many local governments with limited resources it is a challenge to prioritise adaptation above current and pressing problems.

¹ Department of Climate Change (2009) Climate change risks to Australia's coasts: a first pass national assessment, <http://www.environment.gov.au/climate-change/adaptation/publications/climate-change-risks-australias-coasts> [Accessed 13 May 2016].

How adaptation might help shape your response to these challenges

Adapting to climate change means making plans and where appropriate taking action now to reduce the negative impacts of climate change now and in the future and take advantage of any opportunities. Local governments are likely to need to build a diverse strategic approach for adapting to climate change that involves both external service delivery, risk management, and internal governance and resource arrangements.

Challenges around adaptation for senior management include:

- **Understanding the timeframes needed to adapt and prioritising actions** Some of the impacts of climate change won't be felt for several decades, allowing time to adapt. But it is important that climate change is one of the future risks being considered now, because many of the ways of dealing with changing climate will need long lead times and extensive planning and preparation.
- **The business case for adaptation actions** Adaptation can appear to be an expensive investment for a future risk. But as climate change impacts are starting to be felt, other costs like maintenance, damages, and loss of productivity may be increasing. A cost and benefit analysis that takes account of these costs may help build the case for investing in adaptation measures now.
- **Assessing the council's climate risk** This may include a broad assessment of risk drawing on climate scenarios and the council's knowledge as well as additions to the council's risk register.
- **Testing the council's strategic planning to determine if it is 'future proof'** The council's current strategic plan needs to be tested to establish whether it remains valid when climate risks are taken into account. It may require consideration of whether the existing vision, overall goals and priorities will still be appropriate in the future.
- **Understanding the council's legal risk** The inherent uncertainties in climate change—such as timing and scale of impacts—can expose council decisions to legal risk..
- **Integrating climate change adaptation considerations across council** Climate change will need to be considered across a number of sectors in council including finance, asset management, environmental management and human resources. Whole-of-organisation engagement may help build efficiencies, bring together a diversity of expertise and avoid counter-productive actions that increase climate risks (maladaptation).
- **Ensuring policy and decision-making is nimble and flexible** to respond to climate change. For example, in a coastal community sand replenishment may help address increasing erosion up to a point, while plans are made for an engineered solution if it becomes necessary.
- **Monitoring and evaluation** Climate change has inherent uncertainties such as the timing and scale of impacts. Decisions may need to be revisited as more information becomes available or changes occur.

This sector brief was developed drawing on the broad body of new adaptation research commissioned by NCCARF. The following reports and factsheets were relied on to develop this sector brief:

- Quantifying the cost of climate change impacts on local government assets
- Climate adaptation decision support tool for local governments: CATLoG
- Planning, building and insuring: Adaptation of built environment to climate change induced increased intensity of natural hazards.
- Barriers to adaptation to sea-level rise
- Rethinking disaster risk management and climate change adaptation
- Limp, leap or learn? Developing legal frameworks for climate change adaptation planning in Australia

All are available for download at: www.nccarf.edu.au/adaptation-library
For more synthesis reports visit: www.nccarf.edu.au/synthesis

