

Climate change adaptation: Briefing note 6

Elected representatives

Who might this be relevant for:

Mayors, Councillors,
State and Federal Ministers

Climate change has the potential to impact many aspects of life and business in Australia. We can expect hotter weather with more frequent extreme heat waves, and rising seas threatening houses and infrastructure along the coast, changes to rainfall patterns and more extreme bushfire weather. The severity and rate of climate change will depend on efforts to reduce greenhouse gas emissions. Climate change is not just a 'green' issue -- it has many significant social, legal and economic implications. Adapting to climate change may also present new opportunities.

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, increased demand for cooling technology including green infrastructure, additional pressure on the electricity grid and household costs through increased use of cooling systems.
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, greater demands on emergency services.
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 emergency planning. Risk of loss of life.
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. High value housing affected, 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 into the future with some possibility this may become more common. Droughts will also continue to be a feature of life in Australia and may be accompanied by higher temperatures. Demand for drought relief will continue
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. Community concerns around shelter, speed of response and recovery

Adaptation:

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

Putting the climate change lens on the role of elected representative

Climate variability (storms, fires, floods, extreme heat, drought) already creates social upheaval and a strong expectation that government will help return communities to normal. Climate change is expected to affect the scale, intensity and frequency of these events as well as create new threats like sea-level rise. As a society we will have to work towards a different version of normal – one with greater resilience and adaptive capacity. For elected representatives the challenges may include:

- **Climate change will bring both risks and opportunities**
Opportunities may include no-regrets adaptation actions that improve productivity, bring design improvements and reduce greenhouse gas emissions. Australian climate-sensitive exports (agricultural products, for example) may become more competitive depending on climate change impacts experienced by our competitors.
- **Climate change impacts have the potential to be very costly**
For example the cost estimate of replacing residential buildings at risk of inundation from a 1.1 metre sea-level rise is as much as \$63 billion¹.
- **There are likely to be 'winners and losers':** In reducing the impact of climate change (i.e. adapting) it is likely that trade-offs will occur. For example, sea walls can change the amenity of a beach and impact on property values and natural ecosystems.
- **Climate change is likely to test what we value in society**
For example, as some animal and plant species migrate or die out in their current habitats, the landscape will start to change. We may need to accept that what we value (e.g. an iconic species or landscape) may no longer be viable.
- **Climate change requires planning and decision-making beyond election cycles** Because climate change will happen over long time periods, the preparation for many adaptation options will need to be put in place now, but the full benefit won't be realised for many decades.

¹Department 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. Elected representatives may need to consider:

- **The business case for adaptation actions** Adaptation can seem like an expensive investment for a future risk. But as climate change impacts are starting to be felt, other costs like maintenance, damages, insurance 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.
- **Integrating climate change into other activities to improve efficiencies including build back better** For example if a bridge will flood more often in the future than plans to replace it could include plans and funds to raise its height to reduce the risk.
- **There is time to adapt** Some risks are already being felt, but for some of the most challenging risks like sea-level rise, the impacts may be decades away.
- **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 longer-term plans are for an engineered solution if it becomes necessary.
- **Considering new funding mechanisms** There may be opportunities to create public-private partnerships to fund adaptation measures or to use existing funding in support of adaptation (e.g. emergency management funds to deal with regular flooding from the sea during storms).
- **Working together across regions** Climate change is a national issue and there will be benefit to sharing common challenges with other councils and levels of government in your region and even across regions. For example, governments can work together to share costs and expertise around increasing the resilience of residents and developing tools to protect assets.
- **Managing community expectations through communication and transparency** Adaptation often means making choices – what risk is acceptable, which options or trade-offs are preferable? Involving the community in planning and preparation will help build understanding of the capability of and constraints upon your organisation (e.g. capacity to protect properties at risk from sea-level rise) and empower communities at risk to think about the direct impacts of climate change.

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
- Cross-scale barriers to climate change adaptation in local government, Australia

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

