*Considering climate change:*

## Adaptation strategies for emergency management in the Peel Region

Emergency management (EM) can be described as the organisation and management of resources for dealing with emergencies, including planning, structures and arrangements, and can include government, volunteers and agencies.

Local government has a responsibility under the *Emergency Management Act 2005* to prepare and maintain effective emergency management arrangements for its area, manage recovery following an emergency, establish local emergency management committees (LEMCs) and ensure that a copy of the local emergency management arrangements are kept in the local government offices.

Disasters occur when the coping capacity of communities is exceeded. Climate change is expected to increase the frequency and intensity of extreme weather events and increase the risks associated with natural disasters, including cyclones, storms, drought, heatwaves, bushfire and floods (Pearce *et al.*, 2009, Emergency Management and Climate Change, National Climate Change Adaptation Research Plan for Emergency Management, National Climate Change Adaptation Research Facility, Griffith University, Brisbane).

By reviewing the potential risks associated with climate change, strategies can be implemented to reduce community vulnerability and increase resilience to natural disasters.

### Goals

Through workshops with local government representatives and other project participants, a vision statement was developed, as three goals, from which to develop the strategies, actions and options for responses related to the management of natural emergencies.

Emergency Management (EM) Vision Statement for the Peel region:

EM Goal 1.  To have a community that is well prepared for, rapidly responds to and recovers from climate-related emergency events.

EM Goal 2.  Strategically located resources that facilitate preparedness, response and recovery.

EM Goal 3.  Well-manned volunteer emergency services that are adequately resourced and supported.

The objectives that sit behind these goals are to:

1.  Reduce exposure of people and property to climate change related emergencies through identification of hazards associated with climate change and assessing community vulnerability and risk.

2.  Reduce exposure and sensitivity through adaptive risk management and building resilience.

3.  Increase adaptive capacity by designing and implementing measures that enhance community ability to respond to hazard/emergency events and recover quickly; planning for continuity of services, recovery planning and preparedness.

### Principles - State Emergency Management Strategy Framework

It is important to ensure that climate change adaptation policies and strategies for emergency management are consistent with the principles outlined in the State Emergency Management Strategy Framework No 2.5 'Emergency Management in Local Government Districts'.  These principles are as follows:

a.  Community Based – focused on local government areas.

b.  Use of Existing Resources – generally utilising existing resources and organisations.

c.  Capabilities and Legal Responsibilities – local emergency management plans.

d.  Emergency Functions – responsibilities should be consistent with state emergency management arrangements.

e.  All Hazards – comprehensive and integrated approach.

f.  Community Emergency Risk Management (ERM) Process – stakeholder engagement in risk treatment.

## Strategies

Based on all of the research, consultation and analysis undertaken for the Peel Climate Change Adaptation project, the following strategies have been developed for the consideration of local government.

The strategies apply to the following local government functions:

- Land use planning;
- Bushfire prevention, planning and response;
- Flood risk designation;
- Information for decision-makers;
- Preparedness; and
- Volunteer support and recognition.



## Land use planning incorporating climate change risks

The changing nature of natural disasters as a result of climate change requires proactive planning that considers the need to plan for larger, more complex and more frequent disasters that cross local government boundaries. Planning decisions made today that fail to take climate change predictions into account may well leave a trail of legacy and liability issues for local governments in the future.

Table 1 presents three strategies which local governments can employ to address climate change risks within their local planning system, including their local planning strategy.

Table 1: Strategies to be applied through the local land use planning system.

| Strategy No. | Action |
| --- | --- |
| Strategy EM1: Identify and map areas vulnerable to climate related extreme events | Identify and map areas vulnerable to climate related extreme events (e.g. erosion, flood, bushfire risk). This information should form the basis for planning and development related policy and should set minimum building requirements to increase individual and community resilience to climate change emergencies. |
| Strategy EM2: Incorporate risk mapping into local planning system | Incorporate climate change risk mapping and responses in all land use documents (town planning), including, for example, the local planning strategy and local planning policies. |
| Strategy EM3: Lobby for State and Federal Government technical and planning support | Lobby for State and Federal Government support for local government to translate new climate change land use information into reality. Adequate resourcing for access to high resolution digital mapping on which to base planning decisions, assistance in implementing and interpreting policy and translating it into planning controls, and legislated power for local governments to enforce planning decisions are essential. |

## Bushfire prone area designation

A drying climate, reduced rainfall and reduced moisture availability are leading to higher fire danger indices for south west Western Australia.

See Section 3.2 of *Adapting to climate change in the Peel region: improving local government emergency management and biodiversity conservation strategies* (PHCC, 2012) for some of the predicted impacts of climate change on bushfires and other natural emergencies.

Table 2 presents two strategies to address this risk.



Dave Gossage presenting on emergency management strategies.

Table 2: Strategies to be applied through designation of areas as 'Bushfire Prone Areas'.

| Strategy No. | Action |
| --- | --- |
| Strategy EM4: Declare Bushfire Prone Areas | Areas of significant high fire danger should be declared 'Bushfire Prone Areas'. This mandates additional building requirements under the Building Code of Australia. |
| Strategy EM5: Educate landholders in bushfire designated areas | Encourage community and individual resilience through education programs about bushfire designated areas and minimum property preparedness requirements. |

## Sea level rise and flood risk designation

Rising sea levels, storm surges and changing rainfall patterns will have significant effects on coastal and low-lying areas. Table 3 presents a strategy for local governments with areas of coastal foreshore, estuarine areas or low-lying areas.



Table 3: Strategy to address increased risk of emergencies due to sea level rise and increased incidence of serious storm events.

| Strategy No. | Action |
| --- | --- |
| Strategy EM6: Map areas of potential inundation | Identify areas of potential inundation resulting from climate change and designate them appropriately to enable climate appropriate planning and development in coastal and wetland areas. |

## Informed decision making

Climate change is rapidly evolving with many implications for local government through its role of delivering community services. Effective policy requires informed decision makers. Table 4 presents strategies to collect new information relevant to assessing local risk and cost-benefit analyses.

Table 4: Strategies to improve Council decision-making.

| Strategy No. | Action |
| --- | --- |
| Strategy EM7: Partner with research institutions to better assess local risks | Develop partnerships with research institutions to address gaps in our understanding of the changing nature of climate change risks as they relate to emergency management. |
| Strategy EM8: Lobby the State Government for additional technical support | Lobby the State Government to develop extreme event forecasting tools, early warning systems and fine scale maps suitable for use by local government. |
| Strategy EM9: Undertake cost benefit analysis of adaptation options | Identify major risks in the area of emergency response and undertake climate change risk management assessments and cost benefit analysis of adaptation options. |

## Preparedness

Adequate preparation for emergency situations can increase resilience and recovery. This applies to governments, emergency organisations and the community. Table 5 recommends a number of measures to increase a local government's preparedness for emergency events.

Table 5: Strategies to increase the preparedness of local governments and communities.

| Strategy No. | Action |
|---|---|
| Strategy EM10: Location of utilities and emergency evacuation centres | Strategically place utilities and emergency evacuation centres in areas of low risk with good access. |
| Strategy EM11: Training and communications | Conduct regular regional emergency event practice drills and establish inter-agency/local government communications plans to ensure clear and consistent operational response across agencies. |
| Strategy EM12: Map water sources for fire fighters | Identify and map water resources for fire fighting and investigate legal authority for dam and reservoir access in emergency situations. |
| Strategy EM13: Identify available emergency resources within the private sector | Identify available emergency resources within the private sector (mining and timber companies, etc.) suitable for emergency response activities. Maintain accurate records of resources and contact details. |
| Strategy EM14: Community education and information | Encourage community preparedness through education and information relating to climate change and the predicted impacts of climate change on extreme weather events. Seek innovative ways of spreading emergency information quickly, such as telephone trees and warning systems, and distribute them to community and volunteer organisations. |

## Volunteer support and recognition

Australia relies heavily on volunteers for emergency response, with approximately 130-150 volunteer fire-fighters for every one career fire-fighter in Australia (McLennan & Birch, 2005). Volunteers play a vital role in supporting their communities in emergency situations and in the recovery period following such events. Increasing climate change risks are placing additional stress on already stretched services.

Table 6: Strategies to support and recognise volunteers.

| Strategy No. | Action |
|---|---|
| Strategy EM15: Regional reward scheme for volunteers and employers | Develop a regional reward scheme for volunteers and employers including Mayoral awards for emergency services volunteer of the year and group of the year. |
| Strategy EM16: Adequately resource volunteer organisations | Ensure that all volunteer agencies are supplied with best practice resources including suitable communications equipment such as mobile communication devices, GPS and identification in vehicles and with teams. |