

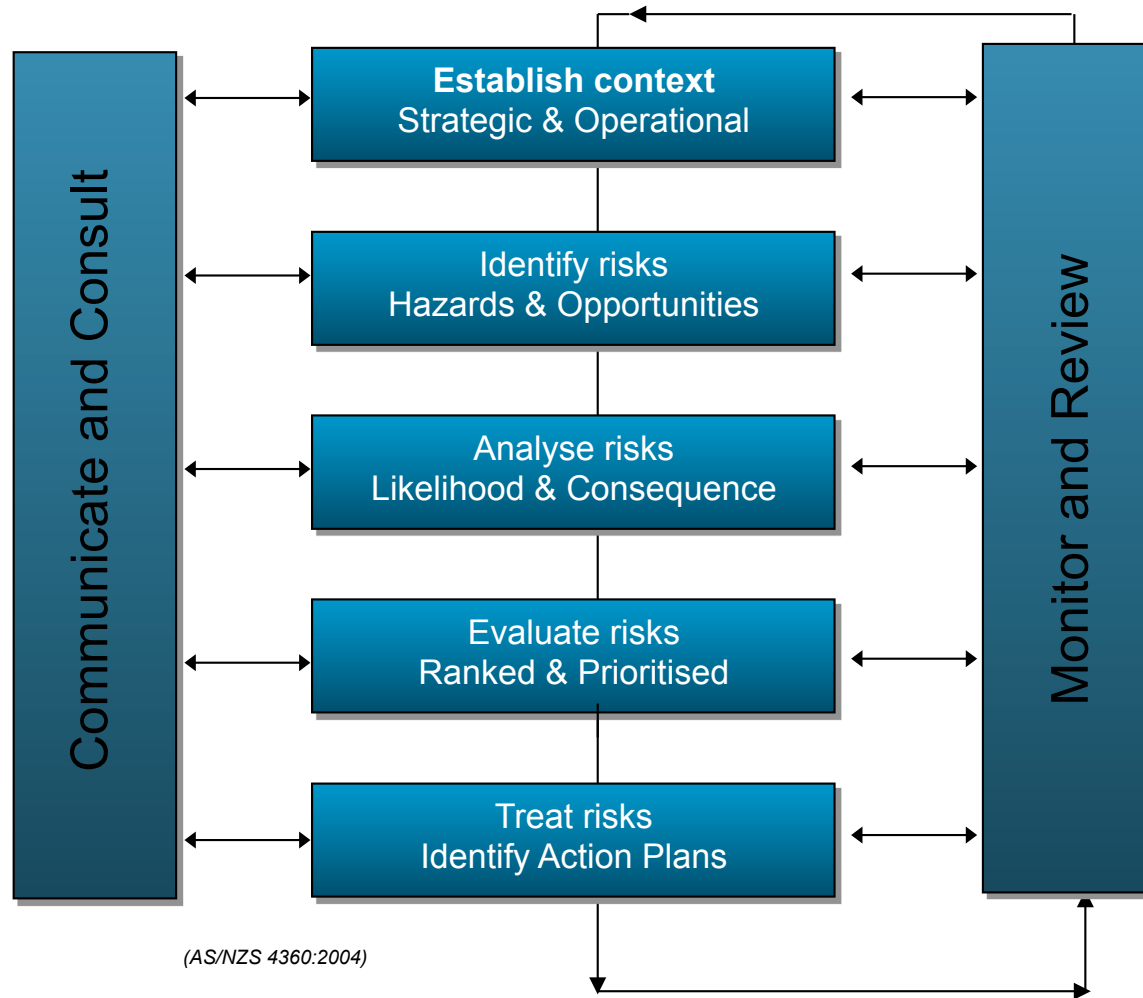
# Shaping Victoria Forum 2011

Planning for Extreme Events...

Wednesday 8 June 2011

## Workshop Outline

- What is Risk Management? Quick Refresher!
- How do we get benefit from risk management?
- Climate change risks
- Quick climate risk assessment activity
- Developing treatment options and strategies



## Why bother...?

Risk based planning and management enables to informed decision making...

## How Do We Do It?

- Doesn't happen by itself...
- Needs some effort...
- Need a risk management process commensurate with the level of exposure
  - Can be quick (light scale), or
  - Deliberate (heavily engineered) risk assessment and management
- Cost Benefit – has to add value...
- Opportunities...

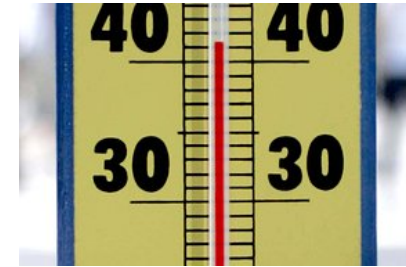
## Getting risk management going...

- Senior management need to support
- Develop and communicate a policy
  - Framework
  - Action Plan
- Empower people and engender accountability
- Adapt the process
- Provide sufficient resources

## Risk Information flows...







### Elderly suffering most in extreme heat

Adelaide's most severe heatwave in a century is taking a toll on the elderly.

There has been a spike in sudden deaths in the past week and only timely telephone calls saved three people on Sunday. One of the weekend victims was a man in his 60s, living alone at a house at Marion in Adelaide's southern suburbs. It is understood there was no fan or air-conditioning...  
ABC News February 2009





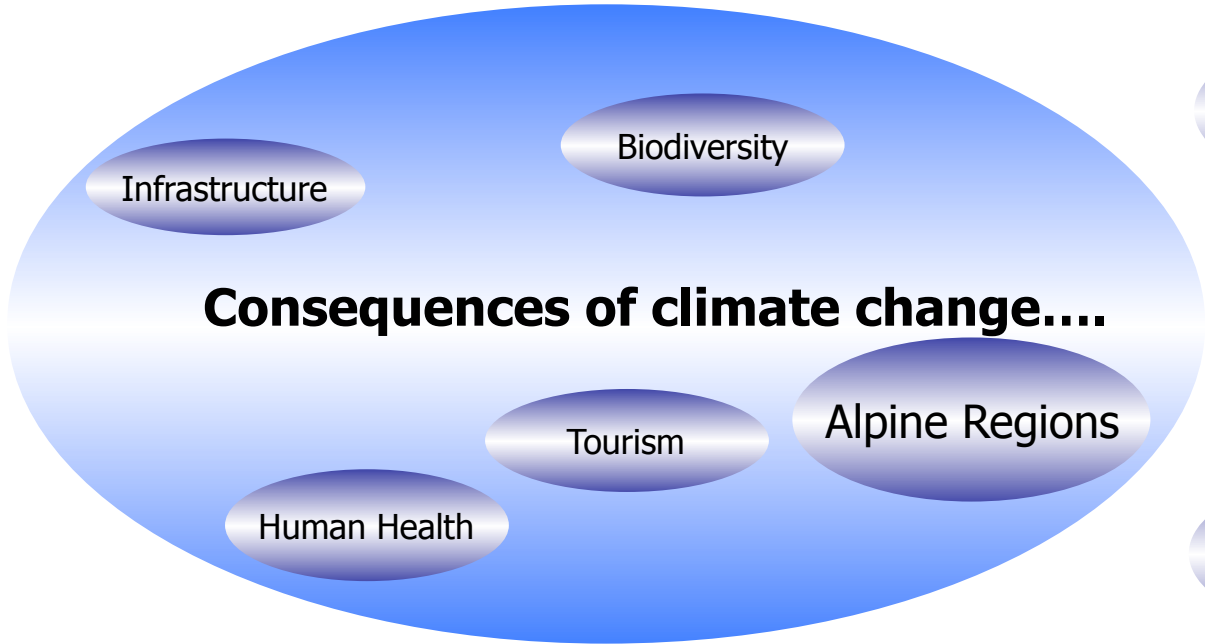
more 'extreme' fire danger days, 12-38 per cent by 2020 and 20-135 per cent by 2050.

Wildfire

Storm-surge

A 1-in-100 year storm surge is likely to happen every 1 to 4 years by 2070.

Overall, warmer with more hot days and less cold nights...



Energy Restrictions

Absence of fossil fuels curtails agriculture...?

Wind and Rain Storms

Coastal Erosion

sea level rise of 1 metre or more by 2100

Drought

Up 40%, rainfall down by 25%...

Agriculture

Decline in farm production - livestock suffering heat stress, reduced stone fruit yields, increases in plant diseases, weeds and pests...

## Western Port...

- Encompasses local government areas of Bass Coast, Cardinia, Casey, Frankston and Mornington Peninsula Shire.
- The region's population of 550,000 (2006) is projected to grow by about 45 per cent by 2031. It has a coastal climate with relatively mild temperatures and high rainfall compared with other parts of Victoria.
- Major regional industries include manufacturing, wholesale and retail trading, construction, and finance and business services. Education, health and community services are also significant, notably in Frankston and Mornington Peninsula Shire, while tourism and hospitality are significant in Bass Coast and Mornington Peninsula.

### Climate change impacts

#### Temperature

- Temperatures in region projected to rise over 70 years by up to 3°C.

#### Sea-level rise

- Sea-level rise will affect coastlines of Western Port region - will be most pronounced during storm events.
- A current 1 in 100 year storm surge could occur every 1 to 4 years by 2070.
- Land inundated during a 1 in 100 year storm surge event may increase by more than 10 per cent by 2030.
- Inundation could affect over 2000 individuals, over 1000 dwellings, and over \$780 million in improved property value in the region.
- Public infrastructure at risk including boating facilities, the Nepean and South Gippsland Highways. Beaches, foreshore reserves and coastal wetland areas.

#### Bushfires

- Days of "very high" or "extreme" forest fire risk to increase.
- Over 73,000 people and 35,000 properties (28,000 dwellings) with value over \$7.6 billion are situated in bushfire-prone areas.

#### Flooding

- By 2030, extreme rainfall from events of up to 24 hours in duration is predicted to increase by up to 25 per cent in at-risk areas of the Western Port region. By 2070, extreme rainfall is projected to increase by up to 70 per cent, depending on the location.
- By 2020 inundation from a 1-in-100 year storm could affect more than 1,000 existing dwellings and property to a value of approximately \$780 million.

#### Rainfall

- Average annual rainfall projected to decline by up to 8 per cent by 2030 and by 23 per cent by 2070. Rainfall decreases in all seasons, but especially winter and spring.
- Drought frequency and intensity are to increase.
- Likely higher water prices in the future.
- Decreased rainfall and reduced stream flow will adversely impact ecological, amenity and recreational values.

Source: Kinrade and Preston (2008) Impacts of Climate Change on Settlements in the Western Port Region People, Property and Places.

<http://www.climatechange.gov.au/en/climate-change/impacts/national-impacts/western-port.aspx>

## Treatment?

- Can be a strategy
- Can be simple
- May be multiple options
- May require government or investor funding
- What is the best option for the business?
- How can we get a feeling for the right direction?