

Impacts of the January 2009 Heatwave and Black Saturday Bushfires in Melbourne's East

The January heat wave of 2009 across Melbourne was of unprecedented intensity and duration with maximum temperatures 12-15 degrees Celsius above normal, and 3 consecutive days of temperatures above 43 degrees Celsius. This event that led to the tragic Black Saturday Bushfires demonstrates the risks to Council assets, operations and service delivery that can arise from multiple climatic stressors occurring at once.

Many air conditioning units failed from overloading across EAGA Council buildings. Further brownouts and blackouts occurred due to peak electricity demand across the municipalities leading to damage to critical council assets and plant equipment. Many staff left work early due to high temperatures in the office and the fact that many office buildings demonstrated inadequate passive design qualities.

Heat island effects that exacerbated heat wave conditions were observed caused by a lack of green infrastructure and increasing urbanisation. This was contributed to by an overall decline in street tree canopy during the prolonged drought conditions that preceded the heat wave events. In fact the hotter drier conditions led to a longer term decline in the health and appearance of Council parks and reserves, leading to a decline in amenity and loss of biodiversity.

Across the region, health support services were severely strained from the increased demand associated with increased heat related conditions. Across the state the week experienced an additional 374 excess deaths over what would be expected, with reportable deaths in those over 65 years of age doubling.

Transport and energy disruptions were frequent. On the 30th January train cancellations peaked with 24% of trains not running, leading to further restrictions on regional mobility for council staff and community to access and deliver critical assets and services.

The economic impacts were widespread for the region, due to the costs of direct damage to infrastructure, the loss of productivity and loss of revenue for small businesses. A decline in strip shopping economic activity was evident, with people preferring the air conditioned refuges of larger shopping malls. CSIRO estimated that for the 28-30th January the south eastern cities of Australia lost an estimated \$800 million due to the heat wave.

Due to the high fire danger during the week urban councils experienced temporary population increases with people migrating away from areas of high fire risk. Council leisure centres were strained due to the increase in demand for air conditioned and shaded refuges. This created significant safety and service delivery issues for staff and the community.

The Black Saturday bushfires placed serious strain on regional emergency services. Councils in neighbouring regions to the fire affected area contributed support staff and resources leading to further disruptions to business continuity. The bushfires created widespread

devastation to communities and infrastructure with 173 deaths and the destruction of over 3,500 structures.

Climate change over the next 30–60 years will make the probability of such events in Melbourne's East more likely, and lead to more frequent, longer lasting heatwaves, more extreme bushfire danger and more prolonged drought conditions. The January 2009 heat wave and Black Saturday bushfires demonstrated the importance of proactive planning for climate change, and the risk of relying on reactive response measures only.

Many positive adaptation measures have since occurred such as the development of Municipal Heatwave Plans and significant structural changes to emergency management. However there are still many challenges that need to be addressed if the region is to increase its resilience to the impacts of climate change in the coming decades.

(Rob Law, EAGA Adaptation Officer, developed from research contained in QUT 2010 and EAGA Council interviews and questionnaires)