Adaptation Action Plans for Infrastructure

Overview
Wagga Wagga City Council undertook a climate change risk analysis of key Council assets and developed 'Adaptation Action Plans for Priority Infrastructure and Vulnerable Communities'. The project developed an online mapping tool to identify infrastructure and assets at risk from climate change to help inform renewal and maintenance schedules and prioritise funding of adaption projects.

Background
Climate Change projections indicate the region will experience an increase in all temperature variables with more hot days, and fewer cold nights. Heatwaves are also projected to increase and be hotter and last longer with an additional 2.5 – 4.5 events lasting 3-7 days longer by 2070. Wagga Wagga currently experiences considerable rainfall variability from year-to-year. This variability is reflected in the projections. All models agree that spring rainfall will decrease in future. Fire risk will increase, with projected increases in average and severe Forest Fire Danger Index values.

The Riverina Murray regional vulnerability assessment identified that the region is vulnerable to infrastructure failures, including some of the main transport routes and water infrastructure. With an ageing population, a large section of the community is increasingly vulnerable to extreme heat events. This project addresses the need for adaptation across key assets and infrastructure and identify the most extreme heat vulnerable sectors of the community.

Implementation
Wagga Wagga City Council partnered with EDGE Environment to undertake a process of risk identification and assessment for current and future threats to key Council and community assets from the impacts of climate change.

Wagga Wagga Climate Vulnerability Explorer
A key component of the project was to develop an online ‘Climate Change Vulnerability Explorer’ Mapping Tool which identifies numerous assets and places of key strategic interest for vulnerable communities (such as schools, aged care facilities, shopping centres etc) and incorporates layers of bushfire hazard, flood study modelling, urban canopy coverage and more with localised climate projection data for 2030 and 2070. Different layers can be selected based on different hazards, assets or climate change scenarios that can inform maintenance and renewal schedules and prioritise investment decisions and capital expenditure on adaptation actions.

Outcomes

A resilient community relies on resilient buildings and infrastructure in order to bounce back after extreme weather events. Extreme weather events will result in repeated damage to infrastructure causing substantial financial loss, as well as the emotional costs for the community and council from the disruption. By being able to clearly assess and then implement adaptation actions for priority infrastructure (such as major transport routes for industry), Council can ensure industry in Wagga Wagga is not frequently disrupted minimising economic hardship. This will have a flow on effect in terms of ensuring better job security and general productivity of the region.

A plan of prioritised adaptation actions was developed for Council's integrated planning and reporting process which will have flow on effects to the Community Strategic Plan, Long-Term Financial Plan, and Delivery/Operational Plan. The outputs from the project will update Council's Asset Management Plans for sewer, stormwater, buildings and recreational assets so that investment in infrastructure renewals and maintenance can be made through an informed process and save Council and the community money in the long term.

Some of the high priority actions include increasing urban canopy and shading along key active transport routes and recreational areas, developing a targeted heatwave management plan and installing water efficient irrigations systems for sports fields. Delivery on actions will be evaluated and reported through Council's Annual Report and State of Environment Report.

Key Learnings

There were many lessons learned on this project, including the need to secure stronger buy-in from the executive level before and during the project. This includes outlining the expectations to senior staff and other key staff around their level of engagement required, and to get commitment from them for the life of the project. The project needed to work through some procurement issues as a specific consultant’s methodology was nominated through the grant application process making it difficult to comply with local government procurement processes. As with any project delivered over several months, consider the potential for staff turnover and drawn out approval processes in project timeframes.

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