

# Flooding, risk management and best practice planning and development

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The announced Commission of Inquiry into the Queensland floods, with its review of land use planning systems, provides an excellent opportunity to open up public dialogue about how the planning system can better integrate consideration of risks, responsibilities, liability, and adaptation to climate change into statutory planning mechanisms.

## Risk management and responsibility

The response to the recent floods in Queensland, particularly in the Brisbane region, is a timely reminder of the false sense of security that has developed from the perception that engineering can effectively manage the environment and avoid the consequences of natural hazards. Of course, technology does play an important role: Wivenhoe served a purpose, but dams would not have mitigated the huge overland flows in western Queensland. Is it a lack of foresight and thus ignoring of available technology that led to Brisbane's floating walkway not being relocatable in a tidal river subject to flooding. Is it simply complacency?

Using 1 in 100 year event historical data gives a false sense of security no longer appropriate in a changing environment where there is an increasing incidence of exposure to natural hazard such as flooding and drought. We need better techniques to advise both the community and politicians of risk to infrastructure and property. We need a transparent debate about responsibility and the level of exposure we are willing to tolerate, and the level of protection and adaptation in which to invest. We need good data so that individuals can make their own judgements and take responsibility based on the level of risk they are willing to accept or remediation measures in which to invest. While risk is identified by examining consequences and likelihood, we are increasingly faced with the necessity of making decisions about reducing exposure, even if a low frequency of occurrence, to safeguard critical public infrastructure.

Planning can be the most effective method of intervention and adaptation to minimise transfer costs to future generations and limit long term impacts. This means reducing uncertainty through knowledge and science, through better partnerships with engineers, scientists, and social scientists. It means transparent engagement of the community with the politicians who make the difficult trade-offs, often between flood risks and economic costs or employment, sometimes to appease a noisy minority, or for someone's short term economic or political gain.

In many cases our problems are self-inflicted. The problem has been exacerbated by past spatial decisions such as building on floodplains, poor location of critical infrastructure and enabling the location of vulnerable people in higher risk areas. Planners struggle to identify the adaptation measures required to deal with climate change and get them adopted given the imprecision of climate change forecasts. In spite of this, basic adherence

to best practice planning principles would go a long way to preventing disasters: don't build on floodplains; retain coastal dunal systems and mangroves as protection against erosion; retain vegetation to slow overland flow and runoff; increase porous surfaces in urban development to allow replenishment of aquifers and reduce run-off. There is no excuse for not applying best practice to new developments in high risk/vulnerable areas. In terms of older developed areas, we should now have enough information to make decisions about defending, adapting, or retreating. The business centre in Gympie, built in a low lying area, is unlikely to re-locate but businesses have adapted to fairly regular flooding through an early warning system that enables owners to remove goods in advance of flooding. After the flood and a good 'spring clean' they are back in business (this is not to trivialise the still genuine impacts).

## Rocklea as an example

So let's look at the suburb of Rocklea (Brisbane) as an example of where many of these issues come into play and let's start a dialogue about what should be done to minimise future disasters.

It is well known that Rocklea is on the floodplain of Oxley Creek, and one would like to assume that the risks were given serious consideration when locating Brisbane Markets there in 1964, as well as building the Oxley sewage treatment plant and investing in its recent considerable upgrading. Historic evidence from the '74 flood shows that water covered the roofs of the market, residential buildings and the sewage treatment plant. During that event, a temporary market was established on higher ground and of course there was no electricity.

So one has to question why there was an apparent attitude of disbelief and inaction on the part of many when flood warnings were announced in January this year. Furthermore, while there may have been logical reasons for establishing the markets in the floodplain originally, such as adjacent transportation corridors and presumably the low cost of land, one might question whether, with our improved knowledge of climate change impacts as well as adjacent high value residential areas, such a vulnerable location is most appropriate as a highly mechanised major food distribution centre for a metropolitan area of two million people.

Local residents (I used to be one...) regularly observe overbank flow into the old DPI experimental farm and new Oxley Creek Common in heavy rain. Several local planning processes for the experimental farm land have produced few direct outcomes in part because of poor returns to State government for the recommended low level of development on the floodplain. In spite of considerable community opposition to Brisbane City Council's proposed bus depot in a flood-prone area in Rocklea, it is going ahead. Given recent events,

a guarantee is needed that Oxley Creek would be protected from any fuel spills (if possible), or the project be modified or shifted to a more suitable location.

In terms of liability for placement of critical public infrastructure, the well-reported sewage contamination of Oxley Creek due to flooding from Council's Oxley sewage treatment plant is surely a call to action. Would bunding be sufficient to protect this site in future, or should a major relocation occur? The Oxley Creek Catchment Association in conjunction with community, industrial land owners and Council, have been working for a long time to rehabilitate large areas of riparian land including the contaminated sites and land disturbed by quarrying in upstream Oxley Creek. Does it make sense that community, with support from Council, continue to invest its time and energy in Bushcare projects and other rehabilitation measures, when agencies including State government, wash their hands (though not in Oxley Creek) of cleaning-up long-term contamination in this waterway which has an established F-rating in the Healthy Waterways annual scorecard.

Furthermore, Rocklea as a case study for post-flood planning purposes poses the additional question of what to do about an existing residential area developed in the '50s – '60s, that is vulnerable to flooding. Are these property owners able to get household insurance? Should there be a scheme to purchase land for a public use in residential areas substantially flooded and provide support for voluntary relocation of residents to, for example, an Urban Development Area? What liability will Council bear for recently approved and built developments that were flooded, such as that in adjacent

Corinda? Queensland planners need to pay attention to the landmark ruling by NSW Land and Environment Court that found that the State Government had failed to consider potential impact of climate change on future flood risk in approving a proposed residential subdivision and retirement village in Wollongong (*Walker v Minister for Planning* [2007] NSWLEC 241).

The floods will long be etched in Queenslanders memories. They have raised challenges for planners and politicians as never before. How can we modify the statutory planning process to incorporate the adaptive measures required to deal with uncertainties surrounding climate change? What is holding up finalisation of the Queensland Draft State Planning Policy Coastal Protection and associated guidelines, released for comment in 2009? Has it taken this major flooding event to prioritise public access to hazard maps based on climate projections? Our vulnerability to flooding risks will depend on transparent and open dialogue based on up-to-date and founded on acceptance of 'best practice' planning.

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