Community Driven Flood Risk Management Planning for Rural Toowoomba Townships

Introduction

The ultimate success of any Floodplain Risk Management Plan (FRMP) depends on the suitability and applicability of the outcomes for the community for which it is written and the flood risks they are exposed to. Toowoomba Regional Council (TRC) has recently completed a series of FRMPs for seven (7) regional townships that showcase Australian leading best-practice application of community driven flood risk management planning.

The towns were specifically identified as requiring FRMPs through prior studies undertaken after the significant January 2011 flood event. Initially, flood modelling for the townships was updated through the TRC Flood Studies Project. This modelling consequently informed the Flood Risk Assessment, Planning Evaluation and Planning Scheme Amendment (FRAPESA) Project in 2016 which, through a focus upon exposure, vulnerability and tolerability of the communities in addition to flood risk, identified the townships with high concern that required individual FRMPs.

Figure 1 provides an illustration of TRC’s flood risk management journey. The FRAPESA scope is shown as the yellow outline whilst the FRMP scope is shown in red.

Figure 1 TRC Flood Risk Management Journey

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The Floodplain Risk Management Approach

The adopted approach for the development of the FRMPs was consistent with industry best practice guidelines including Handbook 7 Managing the Floodplain: a guide to best practice in flood risk management in Australia. The project stages and milestones are illustrated in Figure 2.

Figure 2 Project Stages

The FRMPs build upon the previous FRAPESA outcomes and therefore were developed based on extensive community engagement, consideration of multiple factors including critical infrastructure, community isolation, community vulnerability, community tolerability, flood hazard, flood emergency response classification, emergency evacuation potential, flood damage assessment, cost benefit analysis and community expectations. The stages of community consultation are presented in Figure 3.
The following key points were derived upon reflection on the community consultation and engagement experience:

- Every community is different; invest in developing an understanding of the community in terms of current flood emergency response, level of resilience, demography, risks and expectations.
- Find effective ways to communicate and engage.
- Promote ownership of the community’s floodplain risk management plan throughout the development of the plan.

Recommended Flood Risk Management Measures

The FRMPs feature recommendations include traditional flood behaviour modification measures and also focuses largely on response modification measures. These measures include land use planning, community flood awareness and flood emergency preparedness.

A multi-stage assessment procedure was applied to potential floodplain risk management measures, comprising of property modification measures, response modification measures and flood behaviour modification measures. A long list of measures was considered for applicability to the floodplain, from which a short list was then further qualitatively and/or quantitatively assessed. The final recommended measures included those presented in Figure 4. The outcomes of these FRMPs will ensure a safer, stronger and more resilient Toowoomba region.
Conclusion

Outcomes from the FRAPESA and FRMP projects were as follows:

- FRAPESA – 42 Flood Studies, Policy and Overlay Development and Planning Scheme Amendment, Flood Risk Information Portal.
- FRMP (by end of 2018) – Flood Studies Updated (ARR 2016), Flood Risk Analysis, Development of Plans for 7 high risk townships.

The floodplain risk management plans are regarded as a tool requiring review and modification over time and therefore the plans should be reviewed periodically (i.e. every five years) in order to remain relevant in terms of understanding local flood risks and advances in floodplain management.

References


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