Rockhampton Regional Council Submission to the Productivity Commission Inquiry into Natural Disaster Funding Arrangements

Key Points

The current funding arrangements for response and recovery from natural disasters through the NDRRA are essential for local governments and local communities. In their absence, or a significant reduction as suggested by the National Commission of Audit and options presented in the Productivity Commission's Issues Paper, the costs associated with a single disaster event, such as a major flood, could financially devastate a local government and the community it serves. The Rockhampton Regional Council area has, in the past 5/6 years, experienced natural disaster damage in the order of $50-55M and if it was forced to cover 50% of those costs that would equate to an approximate 10% increase in general rates. The other impact on Local Governments would be the availability of finding to be able to complete the works in a timely manner to maintain service delivery to their communities.

While natural disaster funding may not directly be a responsibility of the Federal Government, the NDRRA arrangements reflect the significant vertical fiscal imbalance between the State and Federal Governments (and Local Government). Local Government in particular does not have the broad revenue base of the Federal and State Governments to offset significant financial shocks nor does it have the ability to apply modest increases to fees, taxes, charges, etc that raise significant funds with current rating structures being the predominant revenue source for Local Governments.

Any review of the NDRRA Category B funding arrangements should fully assess the impacts on and implications for Local Government. This should consider whether claims are for State or Local Government expenses and determine the potential financial impacts of any changes in subsidy rates or thresholds on Local Governments and local communities.

The current threshold for NDRRA funding to Rockhampton Regional Council is $284,468. It should be noted that this threshold applies to eligible expenses and does not reflect the full cost of disaster response and recovery to Council. This amount could be modestly increased and indexed annually to provide a higher level of Local Government and community contributions, providing there is a counterbalance of increased funding of disaster mitigation infrastructure.

The concept of betterment of existing infrastructure damaged by natural disasters is supported by Council. Betterment projects should be considered on the same basis and mitigation projects to enable prioritisation of capital funding to where the benefit-cost relationship is greatest.

Funding under the State administered NDRP (NPANDR) has assisted Rockhampton Regional Council better understand the likelihood and risks associated with natural disasters. In particular, State and Federal Government financial support for flood modelling of the Fitzroy River and local creek catchments in Rockhampton have directly contributed to a better understanding of flood behaviours and associated risks. This in turn has increased the extent and rigour of Council's development controls in flood prone areas. However, this better understanding of flood risk also results in an increase in the number of properties and infrastructure considered "at risk" from flooding.

While improved land use planning and development controls limit increases in flood prone residential and commercial activities, there is a significant legacy of historical development in what is now considered flood prone areas. Because of the significant private and public investment in these areas, retreat strategies such as property buy-backs are not economic unless in isolated circumstances. In addition, residential and commercial flood insurance has become prohibitively expensive in these areas and many homes and businesses are effectively uninsurable. Flood mitigation measures, with some residual risk associated with extreme events, can be the only feasible and economic means of better managing risk to life and property.

The current funding arrangements for disaster mitigation works are grossly inadequate in the context of overall expenditure on natural disasters in Australia. Long term, sustained effort needs to be applied to mitigate the impacts and costs of natural disasters in Australia. By comparison, funds applied to education and awareness campaigns are subject to far less rigour - potentially because they are not controversial and because they are political "visible".

Prioritisation of mitigation projects is informed by Cost Benefit Analyses. Cost Benefit Analyses, while imperfect and variable in their application, should continue to provide one means of prioritising disaster mitigation projects.

The extent of claims in individual local areas under the NDRRA (Category B as a primary measure as it represents the vast majority of disaster expenditure under these programs), AGDRP and DRA could provide another means of identifying areas of priority for mitigation works.

Disaster mitigation projects are currently proposed by Local Governments who then seek funding under competitive grants programs. This "hands-off" approach by State and Federal Governments not only places responsibility in the hands of the tier of government that can least afford to take action, it also perpetuates the variability in applying Cost Benefit Analysis - even in the context of State Treasury guidelines (such as in Queensland).

A more proactive partnership approach, where projects are developed collaboratively would reduce the burden on Local Government and lead to more consistent assessment of the relative merit of individual and competing projects. While State and Territory Governments have agencies responsible for disaster response and emergency management, no such agencies exist for disaster mitigation (at least in Queensland). In Queensland, the QRA might be transformed into such an agency by extending its scope from recovery and reconstruction to include natural disaster risk management and mitigation functions. An examination of institutional arrangements for disaster management, response, recovery and mitigation in other jurisdictions around the world may lead to improved arrangements in Australia.

The NDRRA does provide some disincentive for State and Local Governments investment in disaster mitigation. Current funding for disaster mitigation works is largely ad-hoc and small scale. If funding for disaster mitigation was to be made on the same or a similar basis to the NDRRA funding split, this disincentive would be largely negated. That is, if mitigation works above a set annual State threshold attracted 75% subsidy from the Federal Government, it would be far more attractive to both State and Local Governments. From a Local Government perspective, a similar threshold to the NDRRA might be applied locally with any mitigation costs for approved projects above that threshold being funded by the Federal and State Governments on a 25:75 basis. This might simply be achieved by extending the scope of the NDRRA to incorporate disaster mitigation works. The thresholds on both State and Local Governments would ensure financial contributions from these levels of government while providing a clear incentive if minimum (threshold) investment levels are exceeded.

An alternative would be to consider disaster mitigation funding on a simple cost sharing basis such as a 40:40:20 Federal/State/Local basis.

The issues paper presents the question, how should the Commission evaluate the appropriateness of expenditure and funding on mitigation, resilience and recovery? The Commission could undertake a comprehensive review of the performance of disaster mitigation projects already in place as well as those currently proposed in Australia and in one or two overseas jurisdictions. While this will be informative, it may not be definitive. It is likely there will be no simple or accurate answer to this question in aggregate as risk applies to local conditions and circumstances and individual mitigation projects will deliver different benefit-cost relationships.

Simply put, there is a lot of money spent on disaster response and recovery (not only NDRRA, NPANDR, etc) and very little spent on mitigation. The consequence will be propagation of future

disaster response and recovery costs that will continue to grow on average at a similar or greater rate than population growth and as the value of assets "at risk" increases.

Another disincentive exists to disaster mitigation investment by Local Governments. All economic mitigation measures will carry some residual risk and potential liabilities associated with the measure being exceeded by an extreme event or otherwise failing. Without some form of insurance or reasonable statutory indemnity for Local Government (as in NSW) this risk may stifle otherwise sound investment.

The role the Australian Government should take in natural disasters is to provide an overarching framework and principles for natural disaster risk management, ensure these principles are consistently applied by the States and Territories and continue to fund natural disaster response, recovery, resilience and mitigation activities in partnership with State/Territory and Local Governments.

Rockhampton Context

The highest risk natural disaster for the Rockhampton region is flooding from the Fitzroy River. The region has also experienced severe flooding from local creeks in both urban and rural village environments and bushfires on its urban fringe and in rural areas.

The Fitzroy River at Rockhampton has a long and well-documented history of flooding, with flood records dating back to 1859. The highest recorded flood occurred in January 1918, and reached 10.11m on the Rockhampton flood gauge. Recent major flood events have occurred in 1991 and 2011 and flooding to moderate and major levels generate significant adverse impacts on the region's community and economy.

Rockhampton has experienced severe flood events in 1918 (10.1m) and 1954 (9.4m), and more recently in 1991 (9.3m) and 2011 (9.2m). Flooding of 9.18m has an APE of 2% or an ARI of 50 years. Significant events also occurred in 1928 (8.7m) and 2013 (8.6m) and moderate flooding (between 8.0m and 8.5m), in decreasing order of flood height, in 1988, 1951, 1983, 1955, 1978, 1958, 1956, 1940 and to a lesser extent in 2008 (7.75m).

Fitzroy River flooding at Rockhampton is generally characterised by extended flood peaks that impact for weeks rather than days. While Rockhampton has had effective non-structural planning and development controls in place for many years to mitigate the effects of flooding, there are significant older urban areas that continue to be impacted by flooding along with businesses that have continued to grow on existing sites.

The Fitzroy River Basin is one of the largest in Australia, with a catchment area upstream of Rockhampton of approximately 140,000km^2 and due to its size and shape, heavy rain events often result in flooding which rises quickly and remains flooded for extended periods (weeks to months).

When the Fitzroy River is in flood, a major flood breakout occurs upstream of Rockhampton, which results in significant water flow in the Yeppen Floodplain to the west and south of Rockhampton.

One recent flood event occurred in early January 2011, when the Fitzroy River reached 9.2m on the Rockhampton gauge. This period also provided the towns of Emerald, Rolleston and Theodore with their largest floods on record.

The Fitzroy River can cause widespread flooding in Rockhampton, particularly Depot Hill, Port Curtis, Allenstown, the CBD, Fairy Bower, Pink Lily and areas of North Rockhampton (Berserker and Park Avenue) close to the river. The figure below shows the floodplain extents in a 1% Annual Exceedance Probability event (i.e. 100 year ARI) at Rockhampton.

It should be noted that extensive social and economic impacts are experienced in more frequent flood events (i.e. the 10% AEP event). As examples:

- Low lying areas of Port Curtis and Depot Hill are inundated at a gauge height of 7.0m which is equivalent to the Minor Classification given by BOM.
- The Depot Hill community is isolated at a gauge height of 7.5m which is equivalent to the Moderate Classification given by BOM.
- The Bruce Highway at Lower Dawson Road is cut at a gauge height of approximately 8.4m.
- Low lying areas of Allenstown are inundated at a gauge height of 8.5m which is equivalent to the Major Classification given by BOM.
- Depot Hill and Port Curtis have been impacted by **32 historical flood events** over 7.0m in gauge height since records commenced in 1859.
- There have been **16 historical flood events** over a gauge height of 8.0m in which the Bruce Highway (Lower Dawson Road) has been cut.

2011 Fitzroy River Flood Event – Rockhampton CBD and Depot Hill

The Cost of Flooding in Rockhampton

While Rockhampton has been impacted by other natural disasters such as cyclones and bushfires, flooding of the city represents the most frequent and most likely natural disaster experienced.

An assessment of estimated total tangible flood damage to residential and commercial buildings and infrastructure in Rockhampton for a range of design events has been undertaken as part of Council's assessment of the proposed South Rockhampton Flood Levee.

The following table provides a summary of that assessment, including the reduction in damages that would result if the proposed levee was constructed.

Event Likelihood		Estimated Fitzroy River Flood Damages	
ARI (yrs)	AEP (%)	Total Flood Damages	Reduction in Damages
10	9.5	$4.2M – $4.3M	$2.4M
20	5	$30.5M - $34.7M	$14.6M - $15.2M
50	2	$53.7M - $63.2M	$24.1M - $26,7M
100	1	$82.3M - $100M	$35M - $40M
200	0.5	$120M - $154M	$48M - $59M
500	0.2	$187M - $258M	$13.8M - $19.8M
PMF	-	$940M - $1,550M	$1.6M - $2.8M

These event based damages translate to Average Annual Damages of between $4.9 million and $6.3 million per annum. Note that these estimated flood damages do not include flooding that may arise from local creek catchments or overland flow.

There are a range of costs associated with State agencies, such as the Police and Fire Services, which are not readily quantified. The number of call-outs can be derived from the respective communications centres but the resources committed and associated costs are not monitored at a localised level - suggesting a potentially significant underestimate of costs to the State.

Understanding Natural Disaster Risk

Firstly understanding the likelihood and behaviour of flooding and then assessing the consequences of flooding... floodplain management approach to disaster management.

Fitzroy River Flood Modelling - 1991/92, 1999, 2011, 2014

Local Creek Catchments Flood Modelling - 2013/14 consistent with Queensland Floods Commission of Inquiry (QFCI) Recommendations 2.4 and 2.7.

- *QFCI Recommendation 2.4 - A recent flood study should be available for use in floodplain management for every urban area in Queensland. Where no recent study exists, one should be initiated.*
- *QFCI Recommendation 2.7 - As far as is practicable, councils should maintain up-to-date flood information.*
- *QFCI Recommendation 2.12 - Councils in floodplain areas should, resources allowing, develop comprehensive floodplain management plans that accord as closely as practicable with best practice principles.*
- *QFCI Recommendation 10.14 - All councils should periodically conduct risk assessments to identify areas at risk of backflow flooding. In respect of such areas, councils should consider how such risks can be lessened, including in that process consideration of the installation of backflow prevention devices. Backflow devices should not, however, be installed unless and until a full risk based assessment has been undertaken.*
- *QFCI Recommendation 11.1 - Councils should consider implementing a property buy-back program in areas that are particularly vulnerable to regular flooding, as part of a broader floodplain management strategy, where possible obtaining funding from the Natural Disaster Resilience Program for this purpose.*

Climate change scenarios considered in flood modelling but standard 1% AEP design events are still most likely to be used for planning and development control.

Bushfire assessment and mapping has been completed . This hazard information will be incorporated into Rockhampton's new planning scheme to provide an appropriate level of development control and risk minimisation