

Coastal Hazards: Emerging Policy Responses

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Abstract

While the nature and extent of potential coastal hazards are being better understood, State and local governments in Queensland are grappling with an effective policy response.

Coastal and other natural hazards are becoming an important focus area for the next generation of planning instruments, as communities recover from the effects of past extreme weather events and come to grips with their future exposure. Land use and development policy implemented through local government planning schemes will be an increasingly important tool in improving communities' resilience to hazard events.

Ideally the local planning response would be informed by a clear and consistent state wide position, and comprehensive local government or region wide adaptation strategies identifying specific intentions for avoidance, defence and retreat. But this sort of clear, higher level guidance is still to emerge for most communities along the coast. Even with the advent of a new single state planning policy emerges, we anticipate that the onus will be on local governments to rise to the challenge.

This paper will provide some perspectives on current experiences in formulating land use and development policy for areas potentially affected by coastal hazards. It will provide some insight to the complexities and impediments at play, and some of the requirements for effective and realistic policy implementation.

About the Author

Jennifer Roughan is a director of Buckley Vann Town Planning Consultants and has over 25 years experience as a planner in Queensland.

She has particular experience in strategic planning and the preparation of policy and regulatory documents for local and state government. She assisted the state government in aspects of the former coastal planning policy and most recently has been closely involved in preparing the new planning scheme for Townsville. She has a strong interest in building more science into planning schemes, to more effectively inform decision making.

As a consultant, she also works with the implementation of planning policy through the development assessment processes and regularly gives expert evidence in the planning and environment court.

Introduction

Obviously, nature has had her say over recent years, reminding us of some home truths: we are vulnerable to coastal hazards and flood events. And it is clear that we will be increasingly vulnerable given the combined forces of climate change and centralisation of our human activities along the coast.

This paper looks at emerging experiences in trying to make sensible policy decisions, particularly in the area of land use and development, and especially relating to urban growth.

Access to information on coastal (and flood) hazards is increasing but is still imperfect and uneven. Even where good data is available, it is becoming evident that it is one thing to have access to the science, it's another thing to decide what the policy is in response.

Recognising this area is a work in progress, we have tried to derive some lessons from experiences so far and identify what may be needed from here on.

We understand complex web of interrelationships with natural processes, ecosystem services and natural resource values, but do not directly focus on those in this paper. We will also refer to coastal hazards in the main, with some reference to inland flood hazard - because there are many parallels to be drawn.

Recent Coastal / Flood Policy History

Queensland has had a coastal management policy, which was linked to the development assessment process and had status as a state planning policy, since 2001. Coupled with SPP1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide, this provided a relatively settled policy framework for around 10 years.

The implementation of both was, perhaps, hampered by a lack of data and funding to resource expensive modelling and risk assessments. And in the meantime, increasing attention in the community to climate change and all its implications, not to mention the hazard events of recent years, has led to a greater sense of urgency in addressing these issues.

In the last 3 years there have been 4-5 further iterations of coastal and hazard-related policy coming from the state. The recent policy history is summarised below:

- 2001 coastal management plan and (intentions for) regional coastal management plans – this plan contained some important new policy positions, but overall has not been felt to be overly effective, despite its SPP status. It may have been too high level and difficult to apply in a development assessment regime. While climate change was mentioned, there wasn't the level of agreement about its influence as there is now.
- SPP1/03 Mitigating the adverse impacts of flood, bushfire and landslide (now lapsed) – SPP 1/03 set the format for many subsequent SPPs and was sound in its construction, but was hampered by lack of data to assist in implementation of the best practice approaches described.
- 2011 Qld coastal plan and SPP 3/11 (now repealed) – while in many ways carrying forward intentions from the former plan, there were problems with the formulation and implementation of SPP3/11. In various ways it was too cumbersome. Although with the repealing of the SPP, the baby may well have been thrown out with the bathwater.
- QRA flood mapping and guidelines and temporary SPP 2/11 (now lapsed) – in general, parts of this initial response to the 2011 flood were hastily put together, and did not provide a big leap forward in how to manage hazards.
- 2013 State planning regulatory provisions (SPRP) – the draft SPRP was a relatively quick response following the repeal of SPP3/11, but was ultimately retained without much change. Its content is described further below.
- 2013 Draft single state planning policy (final pending) – this document was meant to pull together, rationalise and integrate the full range of state policy. It deals with coastal hazards along side flood, bushfire and landslide but is general in nature and provides no real guidance about how the policy ought to “hit the ground” in a tangible sense. Its content is described further below, although we are yet to see the final version.
- Pending “model code” – a response to Flood Commission's recommendations, this document is understood to be under preparation, although we are yet to see it even in draft form.
- Various building code (Queensland Development Code) parts - although not on everyone's radar, this is part of the state's regulatory regime. There are, for instance, parts dealing with floor heights and essential services in buildings.

Of the framework, the 2013 State planning regulatory provisions and the draft single state planning policy provide the most current statement of state intentions.

State planning regulatory provisions

The 2013 State planning regulatory provisions has two parts:

- making planning instruments (which guides future planning by local and state government), which says in summary:
 - urban growth/development is to avoid impacting coastal resources and values (including HES);
 - consolidation is preferred;
 - a risk evaluation ought to be undertaken before determining new urban areas; and
 - a hierarchy of avoid, retreat, accommodate or protect ought to be adopted in addressing coastal hazards;
- development assessment (which only concerns itself with impact assessable development within the coastal management district - which tends to be a subset of the defined erosion prone area. In relation to hazards, the assessment criteria say:
 - development ought to “consider” the risk and “wherever possible” remain undeveloped; and
 - in erosion prone areas, retreat is preferred, but otherwise development should not intensify or move any further seaward than existing development, or be temporary or relocatable, unless it “would not compromise coastal management outcomes and principles”.

Draft single state planning policy

For its part, the draft single state planning policy says (in summary):

- planning instruments ought to “reflect” a natural hazard risk assessment;
- development in new or existing areas is to “avoid or mitigate” the risk “to an acceptable or tolerable level”; and
- erosion prone areas in the CMD are to be kept development-free or risks are to be “avoided or mitigated”

At this stage the state planning regulatory provisions and the draft single state planning policy do not provide a great deal of clarity or specific guidance on what is acceptable or what form response strategies should take. They do not really provide us with “the answer”. They leave a great deal of the responsibility to resolve these very complex issues with local government.

This may be a good or a bad thing, depending on your perspective. At the very least, between this and other aspects of the draft single state planning policy, it leaves a lot of competing demands for limited local government resources.

Other directions

In addition to the Queensland policy documents, some high level guidance has also emerged from the Federal government and other significant sources like the Queensland Flood Commission.

These are helping to give weight to some important decision making concepts and frameworks, including:

- the need for risk management approaches (responding to the combination of likelihood and consequence of the hazard) – which is advocated by the 2013 report by the Productivity Commission on Barriers to Effective Climate Change Adaptation and underpins guidance material behind the Queensland government policies;
- understanding acceptable level of risk to the community - articulated in the Flood Commission's reporting and also inherent to risk management approaches; and
- the need to clarify and coordinate the roles of different levels of government and potentially duplicating and overlapping areas of regulation - while recognising that local government planning processes and development assessment regimes will clearly play a key role.

In summary:

- there has been a lot of focus on the issue of coastal hazards, but not a lot of clarity on consistent and effective responses;
- there is a clear need for a great deal of better information around the extent and nature of the hazards, their potential consequences and level of risk that is acceptable communities; and
- it is clear that all levels of government will need to have a role, but it's not at all clear yet who will do (or pay for) what.

Emerging Experiences in Queensland

In terms of both information and policy direction, we are in something of an exploratory phase in Queensland. There seems to be a number of research and pilot projects underway but not a lot of solid guidance and a few false starts on state level policy direction.

Adaptation strategies

Before looking at some of the new local government planning schemes to emerge, it is worth commenting on the concept of coastal hazard adaptation strategies.

These were established as the key implementation step under the now defunct coastal management SPP3/11. They were seen as being documents that would be adopted into planning schemes. The implication under the former SPP was that they would provide specific guidance on not only the adopted/committed adaptation response but also detailed site based development standards that might apply where development did occur.

The draft single state planning policy similarly defers resolution of key issues to a further adaptation strategy or hazard management strategy that it expects local governments to undertake.

The Townsville Coastal Hazard Adaptation Strategy was undertaken in 2012 as a pilot project under the guidelines attached to SPP3/11 and was funded by all three levels of government. It provides a compendium and a learnings report to inform other local governments.

It is a very useful document and provides a vast amount of good quality information about the hazards and the potential options available. However, even with the significant amount of effort put into it, it does not provide answers or direction to the level the former and now proposed state planning policies anticipated. It is not of a nature that makes it suitable for immediate adoption into the planning scheme.

Of particular note: a central observation made in the documents is that it takes a very significant commitment of resources to get even a basic level of information. Also, that it is seen as a “first step “ in developing an adaptation plan – it did not lead to firm costing of, or commitments to, particular strategies and did not test the level of risk acceptable to the community (that is, it did not involve any wider community consultation). In many areas it identified accommodate or combined protect and accommodate options, but it did not specify the particular standards that must then apply to new development in these areas.

This is by no means a criticism of the project. What it does mean is that we need to be realistic about how far these processes will take us and how much they will cost.

We understand that Mackay is about to commence work on a comprehensive assessment of coastal and inland inundation risk, similar to the adaption strategy model. But there are few other examples of local governments committing the resources to a similar scope of work so far.

Local government planning schemes

Despite a lack of information and decision making on adaptation strategies (especially commitment to potentially expensive protection and mitigation works), cities go on, development pressures continue and strategic planning is being undertaken.

At the moment there is a particular flurry of new work on a new generation of planning schemes – post local government amalgamations and the introduction of the Sustainable Planning Act and the subordinate Queensland Planning Provisions (the standard planning provisions to be adopted across the State). Many planning schemes are at significant points in their preparation, although few are adopted as yet.

It is a useful time to look at emerging approaches in a few draft planning schemes that have reached the stage of public notification, and thus are on the public record so far.

Sunshine Coast Regional Council

This draft planning scheme establishes a very clear strategic intention and carries it through to the detailed provisions. The central policy position is essentially to avoid new development in areas of hazard, but allow development to occur within hazard areas where it is already committed to development (for example, development that is already approved or is “infill” development on already zoned land).

It does not back zone or preclude intensification of development in these areas. Instead, it establishes codes to nominate the additional standards that development must meet.

Interestingly (and neatly), the draft Sunshine Coast plan deals with inland and coastal flooding hazard together in one overlay and associated code.

In addition, it identifies new priority development areas that are potentially vulnerable: Maroochydore (as a principal regional centre), and Caloundra South (as key greenfield areas for the region). For these areas, master planning is expected to resolve/address the response to the coastal and flood hazards.

Hence, the primary policy position is one of accommodate and possibly protect/defend – both for existing urban areas and for the strategically determined greenfield areas. It does, however, establish strong urban growth boundaries outside these areas.

Brisbane City

Brisbane’s draft planning scheme response is similar, although not nearly as clearly or consistently expressed. At a strategic level it suggests the key policy is avoidance, but in the more detailed provisions it appears to take the same approach as Sunshine Coast.

It does not appear to preclude intensification of vulnerable areas through back zoning, it makes detached houses largely self assessable and concentrates (like Sunshine Coast) on establishing development requirements for aspects such as:

- floor heights for habitable and non habitable rooms;
- access and (less clearly) evacuation;
- off-site impacts on flooding (especially as a result of filling);
- location of essential building services (electrical etc);
- flood immunity for community infrastructure; and
- flood immunity for hazardous materials.

Not surprisingly, the draft plan has evidently been supported by more detailed investigations of river and creek flooding than coastal hazard to date.

Townsville City

Although prepared in parallel with the adaptation strategy work, the draft Townsville planning scheme has incorporated a common sense response to coastal (and flood) hazards. It can be summarised as:

- a presumed defence of the CBD and its immediate surrounds, allowing for intensification of commercial and residential uses in well serviced central parts of the city;
- increasing opportunities for residential intensification in inner areas that are generally free from coastal hazard (although may be subject to medium level of flood risk);
- maintaining the status quo in most other vulnerable areas, like South Townsville, with some selective wind back of development potential;
- like Sunshine Coast, there is a strongly expressed growth boundary that ensures avoids new greenfield land beyond those already committed; and
- standards for development under flood and coastal overlay provisions.

Types of responses and their implications

Overall, some useful and sensible responses are emerging, but there have been no really surprising shifts or significant policies of retreat. The inclusion of hazard mapping itself is a tangible step forward.

The following are some observations and thoughts on the way schemes are starting to deal with the issues, organised under the typical “protect, accommodate, retreat” concepts:

Protect

Although generally seen as the least preferred or last resort option, there is an emerging trend towards “assumed defence” in key areas like Townsville CBD and Maroochydore. These areas are otherwise sensible areas in which infill and intensification policies might apply, having regard to their accessibility, existing investment in services and infrastructure and economic and social significance to their communities.

Few, if any of these places have actually committed to and funded defence works. There is a presumption, but not certainty, that an area will be defended.

Avoiding

This strategy is an important one. Indeed, it is relatively easy to avoid extending urban areas further into hazard areas. The reality is that there are already substantial areas with some level of commitment to new development requiring a more pragmatic, mixed avoid and accommodate response.

Accommodation

Accommodation policies are obviously where the draft Brisbane and Sunshine Coast planning schemes are placing emphasis. This reflects the reality that much of their urban areas are already at risk. Many at risk areas (like Bradman Avenue in Maroochydore or parts of the new light rail corridor in the Gold Coast) are ones that have been targeted in the past for more intensive development and often contain a mix

of more intensive and less intensive uses. Back zoning or precluding further intensification can seem like a less than practical option in those circumstances.

In these sorts of areas, the idea is that new development ought to decrease vulnerability by increasing floor (or ground) level heights and achieving improved structural integrity.

In the literature, strategies of accommodation are often assumed to be coupled with policies of no intensification. The reality may be that some level of intensification may be needed to provide an economic incentive for these improvements.

An alternative suggestion in the literature is the idea of altering zoning to a different, less vulnerable type of use (for example, from residential to a commercial or industrial use). This also may create an economic incentive, but is likely to be more problematic for a wide range of reasons including the potential for a double blight (areas affected by both the hazard and a reduced amenity) and other unintended consequences.

Where accommodation strategies are proposed, there will likely be a range of more detailed tensions that planning schemes will need to anticipate and resolve. These issues may include impacts of local amenity, less than desirable urban design or safety (crime prevention through environmental design) outcomes and off-site hydrological effects from filling etc.

Evacuation routes and planning also becomes more critical in these areas, and is probably where there is least clarity in terms of an acceptable standard of risk.

Retreat or accept?

Other than the Grantham example, retreat through land swaps and buy outs, or through substantial winding back of development rights is not emerging as a favoured policy option.

Instead there is an emerging trend towards policies which “accept” the risk and merely hold the line by preventing intensification: we aren’t solving the problem but we aren’t making it worse.

Where to next for our Urban Policy Response?

Although very much in an evolving, emerging phase, we believe it is worth reflecting on coastal (and flood) hazard policy experiences to date to derive some pointers for what may be needed in the future.

From the recent state policy experience, the lesson may be: if we are going to establish good sustainable policy, we need to work hard to get the right balance of certainty and flexibility, and make sure it is practical and workable.

From the local government level response to date, we can identify that:

- local government does need to play a key role: the state can be less responsive to local circumstances, issues and impediments. But it needs to be resourced to play its part effectively;
- nobody has yet asked the community what its level of risk tolerance is. How do we inform and conduct that debate? How difficult will it be to arrive at that determination in each community? (To date, the 1% AEP event with sea level rise assumption appears to have been taken as the default level);
- we need to make a sensible start and build on it as information and resources become available;
- even at this early stage we can and should be strategic and clear thinking: setting a clear policy position rather than leaving the issue to be fought out at the site-by-site development application level. This means that we need more than motherhood statements in the planning scheme, and overlay and underlying zoning provisions need to be aligned and coherent;
- some particular areas for further thinking: opportunities in responding more directly to temporal dimension of the risk. When do we need to act? And developing acceptable standards for evacuation; and
- there is a great deal of potential duplication/confusion between planning scheme and building regulations that the state needs to resolve.

Finally, it is essential to recognise that land use/development policy and planning schemes cannot work alone. They are not retrospective in nature (they cannot right past wrongs) and need to work along-side a range of complementary programs, including emergency response and recovery plans, public education and funding arrangements for defence and mitigation measures.

Acknowledgements

David Corkill, Principal Planner, Buckley Vann Town Planning Consultants.
Emma Murphy, Planner and GIS specialist, Buckley Vann Town Planning Consultants.

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