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## TO WHOM IT MAY CONCERN

### Submission on “Better Urban Planning” Issues Paper December 2015

GNS Science would like to take the opportunity to provide feedback on the above document, with particular regard to the management of natural hazards.

A Crown Research Institute, GNS Science is New Zealand's leading provider of Earth, geoscience and isotope research and consultancy services, where we apply our scientific knowledge to create wealth, protect the environment, and improve the safety of people.

Our submission is limited to the following questions outlined in the Issues Paper:

Q20 Which aspects of the existing planning system would be worth keeping in a new system?

Q29 Are there provisions in other statutes that should be integrated into a new statutory framework for urban planning?

Q34 Natural hazards

- a. Thinking beyond the existing planning system, how should a new model manage the risk of natural hazards?

Q38 Capability

- a. Does the capability exist within local and central government to implement a fundamentally different approach to urban planning?
- b. What are any gaps in capability likely to be?

This submission will address each of these questions in the following sections. In forming our submission, a workshop was held with GNS Scientists from the Natural Hazards Division. The scientists who attended are experienced practitioners in risk assessments, and have experience in the translation of science into a planning framework. The purpose of this workshop was to gather their experiences of managing natural hazards in the current planning system, and thoughts on how it could be improved. The issues identified in this submission reflect the outcome of that workshop.

## **Q20 WHICH ASPECTS OF THE EXISTING PLANNING SYSTEM WOULD BE WORTH KEEPING IN A NEW SYSTEM?**

The fundamental purposes and intent of the current planning system offer planners a strong suite of tools to use for the management of natural hazards. The integrated nature of the system across agencies and levels of government (national, regional and district), along with linkages to other pieces of legislation, allows for a comprehensive approach to natural hazards planning through council plans, policies and resource consents. The process for policy development and land-use consents provides an opportunity for open and transparent decision making.

Following the internal GNS Science workshop, several themes were developed that encapsulated the positive elements of the current planning system that should be retained if a new system is created, as outlined below:

### **Activity status**

The planning system has been well tested both through practice and the judicial process, and as such there has been a good understanding of the activity status (i.e. permitted, controlled, discretionary etc.), and the requirements for each these. The activity status framework is seen as a positive of the current system as it allows council to set conditions for development, or to plan to avoid development in areas that are prone to natural hazards. This recognises that land-uses can be affected by the environment in different ways, and that there need to be restrictions as to what type of activities should be allowed in certain areas. The current framework provides well for a risk based approach to planning for natural hazards, where the activity status becomes more restrictive as risk increases.

### **Consultation and engagement**

A strength of the current system is the requirement to undertake consultation of multi stakeholder views and inputs into the planning process. Involving multiple stakeholder views into the process provides an opportunity for robust and transparent decision-making process. This allows for different positions on certain topics to be heard, and for the community to be involved in the planning process.

The requirements to consult with the community can lead to positive outcomes for natural hazards planning decisions. An example of this was GNS Science's input into the Hutt City Councils Plan Change 29, where the scientific inputs from GNS Science led to a number of natural hazards provisions being included in the final plan change strengthening the requirements for new developments within the plan change area (Saunders & Beban, 2014).

There is a strong willingness from councils around the country to engage with one another and with the scientific community on land-use planning issues to improve land-use planning and policies, especially in relation to natural hazards. There is a high level of goodwill and openness in science knowledge transfer system between scientists and council staff to share and gather information, even when it crosses political boundaries. The provision for consultation in the current planning system should be retained and extended to principles of engagement, as it allows people to be involved and informed of what is happening in their community.

## Hazard awareness

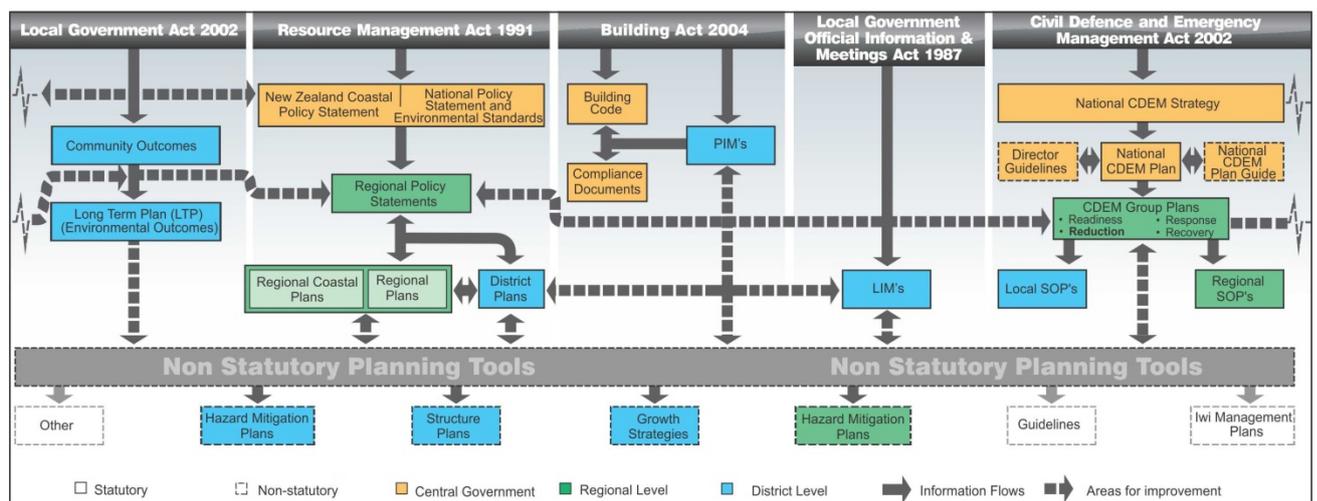
The current system has made progress towards increasing people’s awareness of hazards and risk in their community, and across New Zealand. Under the RMA, the NZCPS provides guidance on timeframes for the assessment of coastal hazards for at least 100 years (policies 24, 25 and 27), recognising that existing and greenfield developments in the coastal need to be planned for differently. This gives greater recognition to the likelihood of coastal hazard risk arising, and gives council the ability to prevent or restrict development in coastal hazard areas. Regulatory guidance on timeframes for other hazards is currently lacking.

Tools in the LGOIM Act, specifically the Land Information Memorandum (LIM) process have been seen as potentially an effective method of raising awareness of natural hazards. However, LIMs are typically applied for when people are purchasing properties. LIMs have the benefit of being able to include the most up-to-date information held by council (provided it’s not in a plan), and the ability for council to update this information more regularly. However, it is extremely variable how information is represented in a LIM, as Councils grapple with the threat of liability over information provided.

GNS Science is currently reviewing the LIM process in regards to hazard information, which should be available from July 2016. The findings from this report may be a useful contribution to the Productivity Commission’s review.

### Q29 ARE THERE PROVISIONS IN OTHER STATUTES THAT SHOULD BE INTEGRATED INTO A NEW STATUTORY FRAMEWORK FOR URBAN PLANNING?

The management of natural hazards falls under numerous legislation, all with different purposes. Figure 1 below shows the key legislation involved in the management of natural hazards, but not all (e.g. the Soil Conservation and Rivers Control Act, Environment Act).



**Figure 1** Legislative linkages for managing natural hazards. Orange = national level policies and plans; green = regional level policies and plans; blue = district level policies and plans. Hashed arrows show where improvement is required (Saunders & Beban, 2012).

Currently the National CDEM Strategy assumes that the RMA will manage risk reduction (MCDEM, 2008), however the current RMA does not manage risk, only hazard. We support the proposed change in the RMA Bill currently being considered by Parliament, which will elevate natural hazard risk into the new combined section 6 and 7. This proposed change – it includes natural hazard risk into the RMA – will strengthen the linkage between the RMA and risk reduction as required under the CDEM Act.

Other key linkages presented in Figure 1 show the importance of information in LIMs. If information is shown in the district plan, then it is not required to be provided in the LIM – something that not all LIM applicants are aware of.

For the management of natural hazards, it is essential that the natural hazard provisions (or provisions that relate to natural hazards, such as those for information in the LGOIMA), in statutes shown in Figure 1 are incorporated into any new framework for urban planning.

### **Q34 THINKING BEYOND THE EXISTING PLANNING SYSTEM, HOW SHOULD A NEW MODEL MANAGE THE RISK OF NATURAL HAZARDS?**

Natural hazards are neither certain in their likelihood, nor in the consequence. They present a series of risks that vary in place and by hazard, making the potential of impacts hard to predict. Any new natural hazards system will need to be reflexive to meet these changing needs and the demands of the changing risks. This would require a quantification of risk at an appropriate scale along with the values, uncertainties and tolerances for each hazard within a high-level framework, while helping to identify acceptable levels of residual risk. While we can never hope to know everything about natural hazards, a new planning system should understand the most about the natural hazards that pose the biggest level of risk, stocktaking the existing information while identifying and prioritising the gaps. The following options should be considered part of a new planning system:

#### **Consistency**

There would be significant benefit in creating a system that provides better cohesion and consistency for managing natural hazards. This would assist in increasing the levels of awareness, acceptance and ability to respond to natural hazard risks. Having nationwide consistency should be sought through a high-level policy framework that can be applied uniformly across the country at both the regional and territorial level. This would ensure that policies, guidelines and advice are being provided for in a consistent manner, whilst giving clear direction of how the framework can best be utilised, with the additional benefit of reducing the barriers between central, regional and local natural hazards planners and policy makers.

Consistency could be achieved through encouraging direct links between the agencies that administer any legislative framework that manage natural hazards, and other key stakeholders who implement the framework. This would provide an opportunity to clarify how risk will be treated across different scales, accounting for life safety, infrastructure damage, economic losses and disruption etc. Within this framework an agreement on the acceptable and tolerable levels of risk communities are willing to accept could be determined. The new framework should also include a methodology for reproducing the uncertainty from the

science (i.e. expert 'A' and 'B' will reach the same answer, similar to that outlined in Port Hills management approach for the Christchurch District Plan<sup>1</sup>). This will make decisions better defensible in the courts, and also to avoid costly litigation against opposing scientific views.

Central to providing a consistent approach would be to hold discussions across all levels of government to create a common set of definitions and terminology. Defining the key terms will assist in removing the ambiguity in the way they are applied while ensuring they can be applied appropriately across a range of different scales. The challenge will be to align the common terminology and definitions from other pieces of legislation that may play a part in natural hazards planning to ensure they can be applied appropriately to all situations. This will create clarity within a new system and improve the way natural hazard planning is undertaken.

### **Approach to managing natural hazards**

Any new approach to managing natural hazards will need to have an appreciation of the long-term natural processes and the differing recurrence intervals between hazards. This approach should incorporate a broad range of natural hazard considerations looking at the costs and benefits of allowing development in a hazard zone through to the costs of recovery. The consideration of the potential for cumulative and cascading hazards needs to be addressed.

An evidence, risk-based approach should be adopted when making natural hazards planning decisions. This would involve evaluating the consequences of an event, an assessment of the likelihood and/or to have planning or engineered solutions in place for the relevant risk. Where the risk increases for an activity, the resource consent category for that activity would become more restrictive. This could be guided by strong underpinning science or information about the known risk in a given area.

A one-stop open portal for accurate natural hazard information could be developed as part of any new system. This service would enable practitioners to connect with content on a range of natural hazards specific information in order to get up to date advice and access to different to science that relates to managing and planning for natural hazards. This service would have the ability to be flexible and adaptive to meet the changing future conditions, as well as being responsive and ready to supply information to those who need to access to it. A single information portal has also been identified as a tool to improve decision making in the Local Government New Zealand think piece on natural hazard risk (Local Government New Zealand, 2014).

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<sup>1</sup> Decision 6 Natural Hazards (Part) (<http://www.chchplan.ihp.govt.nz/wp-content/uploads/2015/03/Natural-Hazards-Part.pdf>)

## **Implementation**

The implementation of any new system requires a significant amount of thought and planning before any decisions are made definitively. The councils across the country have varied levels of capacity and capability to cope with a complete overhaul of the current system. Any new system or model would have to be well considered with agreement and acceptance from the national, regional and territorial levels on how the most appropriate way to roll out any new system would be. This would be supported with national level tools and guidance for councils and practitioners on how to better plan for natural hazards.

Any new system needs to have national guidance provided to assist councils in the implementation of natural hazard and risk management. The system for natural hazards management needs to be adaptive, in that any new hazard or risk information can be incorporated into a plan, without the need for the resource intensive plan change process in all cases.

## **Social and cultural**

There should be space within any new system for the inclusion for cultural and community inputs into the planning process, recognising there are different types of knowledge and science, and that there is value in having space to incorporate these into a natural hazards planning system. Any decision made on behalf of community should reflect their needs and experiences. Natural hazard management decisions should be made in an open and transparent way that takes into account the views and expectations of the community.

## **Q38 CAPABILITY**

- a. Does the capability exist within local and central government to implement a fundamentally different approach to urban planning?**
- b. What are any gaps in capability likely to be?**

Relevant for these two questions is a project GNS Science undertook in 2014, which reviewed councils capability and capacity for managing natural hazards through land use planning (Saunders, Beban, & Coomer, 2014). A survey was circulated to policy and consent managers in all 78 councils in New Zealand in June 2014. A response rate of 50% (staff from 39 councils responded) was received, which allows for an insight only into capacity and capability issues for natural hazard management for those parties who responded to the survey. The main findings were:

- 60% of respondents were aware of the risk reduction provisions in the CDEM Group Plan for their district. This shows that there is still a significant number of the respondent councils who are not aware of their CDEM provisions and their associated risk reduction roles. This shows a need for CDEM staff and planners to communicate more frequently with one another.

- 49% of respondents do not have a staff member responsible for providing natural hazards advice to planners. Of those that do, those staff members are often emergency management officers or engineers. Of the remaining 51% of respondents, 49% outsourced this role to external consultants (the remaining 51% did not). This shows that there are a number of Councils who may not be obtaining specialist natural hazard advice, which could result in inappropriate land use planning decisions being made.
- 47% of councils that respondents whom have staff with natural hazard responsibilities have undertaken training in natural hazards. This training included university papers, NZPI courses, GNS Science and NIWA courses.
- 83% of the respondents make new staff aware of the natural hazards in their district/region, and the implications for land use planning. This helps to assist with the continuity of natural hazard planning and ensure that institutional knowledge is passed on when people leave.
- 71% of hazard information obtained by respondents is peer reviewed. This process ensures that the hazard information used by councils is robust, has adopted the correct methodology, and includes appropriate recommendations. This in turn ensures that councils are able to make informed land use planning decisions regarding natural hazards. However, 15% do not peer review natural hazard information and 14% don't know whether peer review occurs or not. This creates the potential risk that the hazard information supplied to a council may contain some inaccuracies or contain assumptions that are incorrect. If these inaccuracies are not identified at the land use planning stage, it could result in developments proceeding that increase the risks from natural hazards.
- 50% of respondents consider natural hazards when a plan change or resource consent is in an identified hazard zone. 44% of respondents only consider natural hazards as part of all plan change or resource consent applications. Ideally, natural hazards should be considered as part of all plan changes and resource consent applications. Hazards may exist outside of the existing identified zones, and if hazards are not being considered as part of all land use planning process, it could result in developments proceeding that increase the risks from natural hazards.
- 45% of respondents monitor natural hazard objectives and policies; 24% do not monitor hazard objectives and policies, with 31% unsure. The results show that monitoring is undertaken in a variety of different ways, from standard monitoring of the district plan and consent conditions, through to no monitoring). However, the authors recognise that monitoring natural hazard provisions is difficult and often provisions are not measurable, making measuring outcomes with and without an event difficult. To overcome this, a framework could be implemented to allow for monitoring of provisions, such as that outlined in the risk based approach released by GNS Science in 2013 (Saunders, Beban, & Kilvington, 2013).

- The challenges for planners identified by respondents included lack of information; costs on obtaining information; information reliability; not enough resources in the council; historical development in hazardous areas; property rights; and guidance on defining levels of risk. Saunders et al (2014) explores a number of potential solutions that would improve land use planning for natural hazards. Many of the solutions identified would assist with addressing the challenges identified by the respondents in the survey.
- There is a wide range in the percentage of staff turnover between the respondents over the last year. While many respondents had no turnover, a number had a very high turnover (50% – 100%). There is the risk that councils with high staff turnover could lose institutional knowledge regarding natural hazards, which could result in a lesser consideration of relevant natural hazards in the land use planning process.

Based on these findings, the capability and capacity of councils needs to be improved in order to fully implement any legislation that manages natural hazards.

Thank you for the opportunity to submit on your discussion document. If you have any questions regarding this submission, please direct them to Dr Wendy Saunders ([w.saunders@gns.cri.nz](mailto:w.saunders@gns.cri.nz)).

Yours sincerely



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