



Doing it better:

Improving scientific guidance
for land use planners

M. Kilvington and W.S.A. Saunders

GNS Science Miscellaneous Series 64



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We welcome any feedback that you have regarding this document. Please contact Wendy Saunders in first instance with any feedback that you may have via w.saunders@gns.cri.nz.

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1.0 EXECUTIVE SUMMARY

This report is the result of a project funded by the GNS Science Strategic Development Fund and EQC, aimed at understanding how non-regulatory technical guidance is used by land use planners. This report also explores the barriers with uptake, and what could be done to improve future guidance material.

The report is aimed primarily at authors of guidance material, but includes some suggestions for how the users of the guidance material themselves can contribute to better guidance generation. It highlights key areas for improving guidance material, and provides prompts, tips and suggestions for those involved in the design and distribution of guidance material.

The report is based on a summary of views expressed in focus group interviews held in five different regions around New Zealand. Participants from the following councils were invited to attend:

- Otago Regional Council
- Dunedin City Council
- Waitaki District Council
- Wellington Regional Council
- Carterton District Council
- Masterton District Council
- Wellington City Council
- Porirua City Council
- Wellington Regional Emergency Management Office
- Waikato Regional Council
- Thames-Coromandel District Council
- Taupo District Council
- Hamilton City Council
- Auckland Council

The focus group participants were interviewed on their experience of guidance material from any and all sources (e.g. researchers, national agencies, groups of practitioners). Participants were from regional and territorial authorities and included land use planners, policy planners, civil defence emergency management (CDEM) staff, science and technical support staff.

This report covers the following topics:

- Guidance material purpose and focus;
- Content (what participants want to see in guidance documents);
- Credibility of guidance material and what contributes to this;
- Suggestions regarding structure and form of guidance material;
- Issues concerning dissemination and outreach; and

- Issues raised about how guidance material fits into challenges facing the overall context of natural hazard management in New Zealand.

This report does not include any specific assessment of existing guidance, or review literature on guidance material.

While the study was organised around the topic of guidance for natural hazard management, many of the points raised are equally applicable to other sectors – particularly other areas of natural resource management.

The report concludes with a top ten tips list for developing guidance:

Top ten tips for improving the development and uptake of natural hazard management guidance

1. 'Lift the game' - users of guidance are looking for material that will improve land use planning for natural hazards in New Zealand, including creating greater national level consistency, and strategic direction.
2. Include grounded examples, real cases, and reviews of what makes these applicable to different contexts.
3. Provide aspirational or new concepts but include consideration of the implementation issues.
4. Good structure is more important than document size. The following are essential: good summary; well-structured contents page; and separation of main points from technical or background information.
5. People expect to Google it – plan for a web interface, or navigable web-based content.
6. Be clear on purpose and audience - know who will use the guidance, understand their communication preferences, and be clear what they will be able to achieve by using this guidance.
7. Use multiple communication approaches - guidance documents need to be part of a package of communication options that will appeal to different audiences, such as workshops, seminars, and road shows.
8. How you produce guidance affects its credibility – improve this by working with end-users in the development and ensuring it is grounded in the legislative and administrative realities of the situation.
9. Plan for on-going development of guidance – invite feedback, find out how it is being used and what could improve it.
10. Users of guidance have a role too - users of guidance need to be proactive about advocating for guidance on emerging issues, developing relationships with those undertaking research; and starting and maintaining active networks for information sharing.

2.0 INTRODUCTION

The purpose of this report is to help those producing guidance materials for land use planners, to improve its quality and ultimately its value. It is the result of a project undertaken to understand how non-regulatory technical guidance is currently used by land use planners, funded by the GNS Science Strategic Development Fund and EQC.

The report provides a summary of the views of focus group participants regarding guidance material designed to support land use planning and natural hazard management in New Zealand. It highlights key areas for improving guidance material, and provides prompts, tips and suggestions for those involved in its design and distribution. It also includes some suggestions for how the users of the guidance material themselves can contribute to better guidance generation.

The project was managed by GNS Science. Like many research institutes, GNS Science produces a number of non-regulatory guidelines for land use planners. The aim of these is to transfer science into a form that can be used by planners, and to provide guidance on how hazards can be managed through land use plans. However, GNS Science recognises that the uptake of their guidance and that of others remains limited. The purpose of the project was to gain an understanding of the barriers, and opportunities for uptake, and the way in which format, composition and overall outreach strategy can influence these. If, as authors of guidance, we can improve our understanding of what is being used, what is not and what limits uptake, there is an opportunity to improve future guidance that is produced.

While the study was organised around the topic of guidance for natural hazard management, many of the issues raised and the suggestions regarding guidance production, structure, content, and dissemination are applicable to other sectors – particularly other areas of natural resource management.

The method for gaining insight into existing perceptions of guidance was to run focus groups. These were conducted in March and April 2013. Participants from the following councils were invited into attend:

- Otago Regional Council
- Dunedin City Council
- Waitaki District Council
- Wellington Regional Council
- Carterton District Council
- Masterton District Council
- Wellington City Council
- Porirua City Council
- Wellington Regional Emergency Management Office
- Waikato Regional Council
- Thames-Coromandel District Council
- Taupo District Council
- Hamilton City Council
- Auckland Council

The focus groups were interviewed on their experience of guidance material from any and all sources (e.g. researchers, national agencies, groups of practitioners). Participants were from regional and territorial authorities and included land use planners, policy planners, CDEM staff, science and technical support staff (an overview of the methodology is provided in Appendix 1).

The observations of the focus group participants have been organised into the following six sections in this report:

1. Purpose and focus – this covers issues such as the meaning of guidance, and the expectations on what guidance can and should deliver;
2. Content - what participants want to see in guidance documents;
3. Credibility - what makes guidance valid and trustworthy;
4. Structure and form – how this can influence the use of guidance;
5. Dissemination & outreach – making guidance accessible; and
6. The context for natural hazard management guidance which includes some comments on how the relationships between research, national policy and on the ground management could be improved.

Section 4 finishes with some concluding observations and a top ten tips list for improving the development and uptake of natural hazard management guidance. Italicised quotes from focus group participants have been included within the report. These quotes are anonymous to retain confidentiality.

3.0 WHAT DO PEOPLE THINK ABOUT GUIDANCE?

The focus group interviews about guidance material for natural hazard management were designed to canvas the opinions and observations of local government staff. Primarily, these staff were involved in the natural hazard management sector. The staff were:

- Located in different regions, within both urban and rural locations;
- From different tiers of councils (regional, unitary and territorial); and
- Involved in different professional aspects (e.g. science and technical, emergency management, land use planning, regional policy development).

While this generated a range of different perspectives, there were some strong and common themes. These themes are outlined below along with hints and tips for those preparing guidance material in the future.

3.1 GUIDANCE PURPOSE AND FOCUS

What is guidance?

The word guidance has a certain connotation – it implies authority...and these are credible authors...

Should cause you to think completely and properly about something.

Good guidance is defined for the audience ...often too wide – aiming at too many different audiences.

Good guidance is meeting a need – and is readily understood by people. Don't want to have to employ someone to interpret it!

Early in the focus group interviews it became apparent that neither the respondents nor researchers used the term guidance with any shared consistency. In particular, the terms *guidance* and *guidelines* were sometimes used interchangeably. Other terms used were advisory notes, standards, best practice, discussion documents, and protocols. To add to the complexity, these types of documents could be developed and distributed by different types of organisations. These included:

- Central government agencies (such as Ministry for the Environment (MFE), Ministry of Civil Defence Emergency Management (MCDEM), Earthquake Commission (EQC));
- Research and science institutions (such as GNS Science, NIWA and other Crown Research Institutes); or
- National and international standards bodies (e.g., Standards New Zealand; ISO).

They are also frequently produced in-house by regional and territorial authorities themselves or by sub-groups and consortium.

Participants joked on more than one occasion – *it would be nice to have some guidance on guidance!* Having a standard and shared definition is not just an academic nicety – it affects the expectations, interest and ultimately value of the material.

Guidance aimed at local government may still be targeting widely different audiences. Within regional and territorial agencies the potential target for guidance material can include planning, policy, management, science, education and engineering professionals, as well as public representatives. The guidance material may even be aimed for wide distribution to lay and public audiences. Each of these groups (many of whom were represented in the focus groups), had differing requirements of guidance, and slightly different views on its purpose. Many participants described situations of picking up guidance material that seemed to be targeted at them but did not match their needs in terms of the language used, the amount of technical information, or the contribution towards their planning, policy or management challenges.

The most common view about what guidance material should do, is that it should be:

- Informative;
- Addresses topical and current concerns for those in local government;
- It may synthesise and interpret complex situations and provide options that differ from existing approaches; and
- Most importantly, it is not compulsory.

This optional nature of guidance was considered by participants to have both positive and negative aspects. On the one hand it allowed for creative, innovative options to be considered, and for users to interpret the guidance against their own context. However, without formal backing or adoption by agencies (particularly from central government), guidance could be easily disregarded.

Within this broad definition of ‘non-compulsory’ advisory and supportive material there were several common overall goals that participants identified for guidance material. Top of the list for participants was that it should provide or contribute to national consistency. As with many resource management areas, there is a need across New Zealand in natural hazard management for greater standardisation of definitions, interpretations, analysis techniques, policy and management approaches. Therefore, a primary goal for guidance material should be to consider how it supports the capacity for regional and national coherence.

Secondly, participants expressed a view that one of the roles of guidance is to ‘*lift the game*’ – provide new direction that is not just aspirational but informative about the practical implications of implementing changes. In the case of natural hazard management, some participants went as far as to suggest that a real need was for guidance to identify a future direction for the sector. This should recognise global shifts, emerging issues, and help prepare local government for upcoming challenges.

Thirdly, participants expressed some hopes that guidance would ‘*do some of the donkey work*’, and ease the burden for council staff to find, translate, and interpret information and design policy, planning or management responses based on this. For example, the hope was expressed that guidance would enable you to decide in a given situation:

- a) if plan provisions were needed;
- b) describe how policy should be made; and
- c) suggest particular policy decisions.

These could not really be regarded as expectations of participants regarding guidance, as the experience to date was that most guidance fell short in this regard. More specifically it was recognised that guidance material could usefully meet several needs:

- a) **Educative guidance:** to condense, clarify and interpret science and technical information. This can be useful to bring people up to speed with the latest information, provide an entry into a field for those new to it, and be a resource for communication with elected members and the wider public;
- b) **Technical guidance:** provide technical support for policy and regulatory development e.g., bottom lines, maximum and minimum levels or standards, and their implications in different contexts; and
- c) **Methodology and process guidance:** providing frameworks, methods or processes for developing and implementing plan, policy or management options.

Prompts for developing guidance

- Include a purpose statement.
- Be up-front about the target audience for the guidance, and develop the guidance for their particular communication and information needs.
- Consider - how will this guidance contribute to national consistency?
- Consider - how does this guidance 'lift the game'?
- What is the purpose of the guidance – Educational? Technical? Methodological/ process orientated?

3.2 GUIDANCE - WHAT SHOULD IT INCLUDE?

There is no single content expectation for guidance material. As guidance material is tailored to the different needs of those in local government, it can require more or less detail, be directive and specific, provide a range of options, can stimulate new ways of thinking, or offer a step by step process path to aid analysis and decision-making. There is also a place for background information, simple guides and summaries of the state of play.

Respondents in our focus groups identified all these possibilities as useful to them in different situations.

I like to think – if I am looking at something that is guidance – that there is some framework that it is proposing that you can pick up off the shelf and then as long as you put the right ingredients into that framework that is then going to give you the product that we need in terms of...modifying our district plans.

I look at a guide and it needs to not only get me to where I need to be but to stimulate my thinking as well.

Sometimes like directive material – sometimes want different options.

However, some content issues received particular attention in discussions. Notably - the challenge of guidance that deals with new concepts, the tension between directive guidance versus providing options, the desirability of process or thinking pathways (e.g., decision-trees), the use of real examples, and content that is grounded in the realities of the current legislative and administrative environment and its challenges.

When choosing appropriate content for guidance materials, the following messages are worth considering, each of which is outlined in further detail below:

- Grounded examples and real case studies;
- Aspirational guidance;
- Help with making decisions and choices; and
- Help with the big picture.

3.2.1 Grounded examples and real case studies

When beginning a new task, reviewing what has been done elsewhere was the most common first step that participants in the focus groups undertook. Therefore, including grounded examples and real cases was the most universally popular potential content for guidance material. As one participant observed:

...for a lot of us...we are looking for some detail and it's actually really helpful to have live examples in there. They might be examples of good policy from other district or regional plans. It might be some case law about what's happened in a particular Environment Court case. It might be some good example policies that you might employ in a particular situation.

What would make this material even more useful is if it was assessed and critiqued for contextual variation – i.e., what important factors contributed to the success or otherwise of the case. Examples include: a technical review of an area and then assessment of the

planning provisions, or a review of practice and plan provisions around the country in relation to a particular natural hazard. This information could then be used by local government staff to consider how relevant and transferable this was to their own situation.

This is particularly important when comparing urban and rural settings or districts and regions of different resource and population bases. As one participant from a territorial authority with a small urban settlement commented – the view of public representatives regarding proposals based on cases elsewhere can be *don't you get some metropolitan solution and impose it on us!* In terms of natural hazards the comparability of hazard and geographic factors in terms of significance, or complexity is also important.

There were two caveats raised about the value of examples from elsewhere as a basis for guidance material. The first was a warning raised in one group of the danger of repeating existing practices as this can lead to a stagnation in the sector, a lack of innovation, and an entrenchment of routines regardless of their functionality. The second qualification was identified by the Auckland group, where it was highlighted that Auckland faced not only different natural hazard priorities (coastal cliffs for instance being a particularly big issue in Auckland compared to elsewhere), and unique administrative arrangements, but the culture and practices around natural hazard management also differed from other regional and unitary authorities. This may also be true for other areas in New Zealand. As such, the Auckland group made the observation that *any guidance has to encompass the variability in how natural hazards are managed across the country.*

3.2.2 Aspirational guidance – new concepts

Participants commented that sometimes they were looking for new ideas – not official guidance on a way of carrying out a policy, plan or management decision but something that would help them to think outside the square. However, this reflection was tempered by the observation that innovation has a cost which is not often very attractive to decision-makers. Councils are risk averse – so while a council department might find a new approach *interesting*, the daily business of getting things done takes precedence.

If new concepts are to make headway, they must include some consideration of implementation barriers and opportunities. Where possible, it is useful to include worked examples and indications of how this has been practically applied elsewhere or in other contexts.

Found [...] toolkit too complicated – too reliant on data and needed whole council approach – need buy in from council so less able to be lead or applied by planners. Couldn't see that they would ever 'get there' to be able to apply it.

3.2.3 Help with making decisions and choices

Another popular inclusion for guidance are frameworks that provide a means of interpreting a technical issue for a local context. Ideally, these will be followed by options for how to address this. Some participants noted that options that included cost and benefit analysis, implications of different paths or a means of choosing options based on different contextual factors would be particularly useful.

Similarly, attractive to some people was the idea of a decision-pathway – such as a decision-tree. However some participants felt that it was important that there was connection between both the analysis part of the pathway and the implementation options. This was a recognised

gap in existing guidance material. Examples cited included the links on the MFE website which provide some direction and principles but not necessarily the steps beyond this. Similarly, the GNS Science liquefaction guideline (Saunders & Berryman, 2012) was regarded as useful in that it outlined what liquefaction is and where it can occur, but a criticism by some was that it does not take council to the point of enabling them to determine what response was required. Others were happy that that the guide took them through a path that enabled them to answer a specific question.

3.2.4 Help with the big picture

One of the repeated observations from the focus groups was the current gap in guidance material that supported sector wide development and rejuvenation for natural hazard management. There was a sense from some participants that there were globally significant influences that would re-direct practices in the sector that were not being articulated and translated for regions and districts. These include influences that are geophysical (such as climate change) or social (such as changes to the global insurance sector). Similarly, nation-wide issues such as improving the alignment of land use planning and natural hazard management were large scale, substantive matters with legislative, administrative and policy process implications that could benefit from articulation and wide discussion.

At a more functional level, a number of focus group participants expressed an interest in guidance that supported the alignment of natural hazard policy with legislation and standards. This included if risk was included in section 6 of the Resource Management Act 1991 (RMA), what this would mean, particularly when you have varying levels of natural hazards and risks across the country?

Prompts for improving guidance content

- Include grounded examples, real cases, and if possible some assessment of what contextual variables influence the success or otherwise of these.
- New concepts and aspirational ideas are more useful with some consideration of the implementation issues.
- Include frameworks that support the interpretation of technical issues for a local context, and the assessment and consideration of response options.
- There is interest in material that addresses large scale issues and globally significant influences that affect the sector as a whole.

3.3 WHAT MAKES FOR VALID, TRUSTWORTHY GUIDANCE?

If you are going to produce guidance – field testing it with people who are actually going to use it or building up case studies and getting the view from people who are using it on the ground is really important.

Validity and credibility are important issues for guidance material. A critical role for guidance material is to provide support for council policy directions. It may be used in a RMA section 32 analysis or even as evidence in an Environment Court hearing. Furthermore, it often needs to have creditability not only with professionals but with political representatives, affected parties and stakeholders.

At its most simple, the credibility of guidance often relates to the authorship – who are the people responsible for producing this material? What is their standing in the field? What are their likely prejudices, or bias? Are they part of a recognised professional body, an independent agency or a government, national or international body with a mandate to make policy decisions? Participants in the focus groups were very aware of expertise in New Zealand, the agencies most commonly producing material (e.g., MFE, MCDEM, GNS Science, and NIWA), international bodies (e.g., ISO) and individuals within academic institutions. Participants also noted that there was a hierarchy of credibility amongst these author agencies. Guidance, from government and mandated statutory bodies was regarded as almost mandatory to follow, and certainly easily argued as being valid. Independent research and academic authors were respected but did not seem to hold the same automatic legitimacy as the previous group. Consultancy generated guidance material could be appreciated for its value but came with concerns regarding its potential to serve specific interests (or be regarded that way by others). Of note is that adoption by a mandated agency immediately confers greater credibility on a document generated by others, although participants were aware of situations where industry groups were lobbying to have their best practice guidelines officially taken up by a governing body.

In addition to authorship, the focus group interviews revealed several other important factors influencing validity and credibility. These include:

1. Where or how the material has been tested (particularly if it has been debated in an Environment Court setting), or taken up and used by other local authorities.
2. How well it links with other material in the field, how it fits with guidance at different levels (international, national, and regional) and whether it has been peer-reviewed by other specialists in the technical area. Participants were aware of situations where there was inconsistency between different sources of publications, which undermines the value of the document.
3. Links and consistency with the RMA – as one participant observed *guidance has to be cognoscente of the fact that behind everything else is the RMA.*
4. The process that has been used for generating the material. This refers to where the idea for the guidance has emerged from (i.e., stimulated by an identified issue in the sector rather than an output or deliverable from a research programme), and whether the process for generating the material includes field testing, workshops with practitioners or collaborations with those directly using the guidance.

One focus group described a positive experience with the development of guidance material like this:

This one here is on social media...it was done as part of a resilience fund so it is a nationally funded guide... I was involved in a couple of workshops to help develop this. This brought together people from around the country with various different skills in emergency management and social media.... There were really well done workshops with good themes and a good process to develop the guide.

What this means for those producing guidance is that while the reputation of the agency contributes to the authority of the material, reputation by itself will not automatically give material credence as guidance. We found that material from organisations that had good reputations for their expertise was frequently cited as too high level, impractical, poorly pitched for the audience, and not grounded in the legal and administrative challenges of the field.

Sometimes you can pick up a guide and you can tell it has been written by somebody who is not at the ground level wanting to implement something. It has been written by a theorist for a theorist. Not written by a practitioner – and that is really a bad guide and I have seen that in a number of instances.

The inclusion of logos of different agencies involved in the production of guidance material was discussed at each focus group. In general, the more groups involved in the development of guidance material added some validity to the material, as it suggested a collaborative initiative where there were checks and balances against different views. However, participants commented that logos themselves could just indicate 'sponsorship', particularly for large organisations. Greater weight was given where individuals from the collaborating organisations were prepared to supply their names and contact details in addition to the logos (this could be supplied on an ancillary website page to make updating easier). It also made it easier and more likely that those using the guidance material would follow up personal links with those involved in the work.

Prompts for improving guidance credibility

- Agency or author reputation is important but not sufficient to make guidance valid and trustworthy.
- Other factors that make guidance valid and trustworthy are:
 - That the material has been tested in the field, Environment Court, and/or taken up by others;
 - It links well to other material in the field, and with guidance at national, and regional level;
 - Has used a collaborative, workshop based or otherwise practitioner grounded process for generating it; and
 - Links with and is consistent with the RMA.
- Logos of collaborating parties carry more weight if they have individuals or at least specific departments or groups associated with them are also listed.

3.4 GUIDANCE – WHAT SHOULD IT LOOK LIKE?

I like checklists

I'm an engineer – I love flowcharts!

Different users of guidance will be drawn to (or put off by) different kinds of features such as checklists, flow charts, tables and graphs. Knowing the likely preferences and needs of the target audience is critical to tailoring the style of the guidance material. However participants in the focus groups identified some universally desirable attributes for guidance material.

3.4.1 Clear navigable structure

While large documents might seem like they would be less attractive to users of guidance material, comments from the participants indicated that structure was more important than size. Overall, participants seemed to prefer guidance material to have *enough content* and not be *stripped down too far*. An easy way to navigate content was therefore seen as critical.

Core ingredients of this structure were good summaries that could be read quickly to see what the document was about; and logical, informative content outline (e.g. contents page), that enables easy negotiation of the document. Also important is a separation between discursive and concluding material from underpinning analysis, technical material, or supporting data. Even participants who felt they would not directly use technical information, or refer to methodology, expressed a preference for it to be included - but located separately from the main body of the work. Similarly, background material was regarded as nice to have - but not the most important part of the material, and therefore needed to be kept relatively simple.

3.4.2 Digital and web-based versions

Participants now largely expect to be able to access the bulk of guidance material via general access (or occasionally membership-restricted) websites. Guidance material needs to be designed with a vision as to how it will be presented online. At a minimum, the documents should be accessible as a downloadable PDF. Where the document is large it is useful to have it broken down in sections – but it was still important to participants that it be accessible as a whole document.

Web-based documents have the advantage of being able to be readily updated – keeping the material *live*. Participants suggested that even when the material remains as a largely static/standalone document, it could be launched with its own web-page that would contain information about where the material is being used, and what modifications and changes are made as a result. End-user associated input and feedback on the material could be facilitated this way.

Material that is designed primarily for web display has the advantage of being able to be presented as levels with links to original source material for greater detail. However, many participants still wanted the option of being able to view the material in its entirety.

3.4.3 Conceptually nested or series publications

Participants expressed a concern that too much guidance material appeared independent and not located in a conceptual hierarchy – such as national to local scale, or basic up-to-date awareness information, technical interpretation, through to management response.

If you've got the national guidance, the regional guidance, the regional policy statement, regional plan, right the way down to the district plans all nicely aligned it's a lot easier to say to somebody "well you're in a hazard area — it's not a wise place to put a house"... and you've got some backing to that.

It was also suggested that it would be useful to have guidance at different levels, some looking into overarching issues across all hazard management; others looking more in depth at specific hazards. One participant expressed the view that it was useful for material to be put out in *sets*, with overarching documents that gave a summary of items, areas and topics that have been covered each year.

3.4.4 Special features

Of the special features guidance material could contain, maps and visuals were the most popular – and many participants found these could be readily adapted for use in internal communication within the local government agency or for helping with external communication with communities and stakeholders.

Checklist and flow charts were also popular amongst participants, and several participants noted the value of templates that were adaptable for their own specific context.

Prompts improving the presentation of guidance

- Good structure is more important than document size, including a good summary, a clear contents page, and separation of discursive, conclusive and technical or background information.
- Most documents will be accessed via the web and can be designed to take advantage of this – in particular keeping them live, adapting and updating them.
- Guidance material is more useful if it fits within a logical conceptual series. Include a list of other publications in the series if appropriate.
- Checklists, flow charts, maps, visuals and templates are attractive ways of presenting information but can appeal differently to different audiences – know intended audience preferences when choosing these.

3.5 GETTING GUIDANCE OUT TO PEOPLE

Some wonderful pieces of information that aren't perhaps driven out in a coordinated way that could then be ...uptaken in a more consistent way across different sectors - a lot of opportunities lost - a lot of good information...on a bookshelf.

Nothing is more disappointing to those who generate guidance material than to find it has languished unused on a bookshelf. Guidance material is hard work to generate. It involves research, synthesis, often debate and critique, then writing, editing and publishing. This matters little if the material fails to reach its audience. The reasons for this can be a mixture of poor placement (so that users cannot locate it), poor identifiers (so that users do not recognise it), or poor timing (users are unprepared to make use of it and unable to locate it at a later time). During the focus group interviews participants were shown a range of guidance publications from a variety of sources, relating to natural hazard management and released over the previous five years. They were also provided with online links to many of these documents in advance of the group meeting. Significantly, few participants were previously aware of more than one or two of these publications (though which ones they were aware of varied from individual to individual). Understanding the pathways local government agency staff locate, and access information can point to ways in which guidance can more successful in reaching its target audience. The following are tips and pointers raised by participants in the focus groups.

3.5.1 Place it where it will be seen - Google rules!

That is an issue - staying on top of these things and I personally find it quite difficult to know what is out there

Participants in the focus groups were asked questions about what sources they regularly used for information. The universal response to this was *Google!* Furthermore, although participants clearly visited a range of national and international websites, their primary information search action was to use key words in a direct Google search. The New Zealand websites they viewed directly include other local government agencies, other civil defence websites, and Quality Planning (an online tool for delivering information on RMA processes to resource management practitioners). Some also mentioned MFE, GNS Science and NIWA (depending on the topic). The Quality Planning website was the most popular New Zealand site. It was commonly regarded as a good example of how to present material – a 'one stop shop' covering a range of different areas with references and directions for further information.

Internationally, participants commented that they used Australian national and state level guidance, UK sites like DEFRA (Department of Environment, Food and Rural Affairs), and the US (e.g. Federal Emergency Management Agency (FEMA) design manual for vertical evacuation structures, and US Army Corps publications). A few participants mentioned that they would look directly at academic journals such as the Journal of Hazard Management.

The reason for using keywords and direct Google searches was clear – searching organisational sites was of limited value because the organisation of the data was regarded as poor – or used different keywords to those participants used.

3.5.2 Create a central reference point

A central repository would just be wonderful!

Participants cited a number of list servers and networks that were used to notify them of publications. These include: natural hazards group, IPENZ, planners forums, and the regional hazards forum.

However, participants observed that it was hard to stay on top of what was being generated, and that when they did receive notification of publications they may not be ready for it. Possibly the most common request repeated throughout the focus groups was the need for a central repository – a clearing house with links to new and upcoming material, that was organised around recognisable themes for natural hazard management and cross referenced or cross-linked. Participants considered this kind of resource site would be invaluable. They noted that it would be good if this was administered by someone with credibility in the field (e.g. MFE, GNS Science, NIWA).

3.5.3 Inform people of work in the pipe-line

Participants also commented that they would like to know what work is coming up – with regular updates (e.g. every 6 months). One participant even commented that if they knew some information was expected they would time their own work to take advantage of this.

3.5.4 Build networks and relationships – a two-way-street

The second most commonly cited source for guidance material was to *talk to people that I know*. Participants who knew guidance material authors, or whose colleagues had dealings with these authors, or who had been connected in some way with the generation of a document, often commented that this had been the way in which they had become aware of it.

The importance of building good networks and relationships between the generators and users of guidance material cannot be understated. Guidance material is only ever part of the way in which ideas are developed and exchanged – or the way expertise is passed from one part of the sector (such as a research organisation) to be applied by others (such as a natural hazard management professional). Personal interactions are vital to this passage and development of ideas and one of the ways in which guidance is valued by participants is for how it links those with different expertise and knowledge.

However, this is not just the responsibility of those developing the guidance material. It is a two-way-street. When participants were asked about their willingness to contact the authors of guidance material not all felt they were likely to do this. However, they were more likely to if they already had dealings with the author, or if they had a specific point they required clarification. They were not likely to contact the author for general updates on their work.

3.5.5 Invite feedback

Some participants observed that when they received guidance material it often appeared to them that this was a final document and that there would be no point in communicating about it with the authors. If authors want feedback on the document, to find out how it has been used, or to gain practitioner insights to help with future revisions clear invitations to do this need to be included in the document. The easier this is (i.e. through a web-page feedback form), the more likely it is that it will happen.

3.5.6 Use multiple avenues

People have different ways of responding and utilising information so to have maximum impact it is important to consider providing material in more than one way. As one participant commented:

Some people are talkers – some like the visual – some want practical steps – some want to stretch their thinking.

Conferences and workshops can be useful ways in which users of guidance material can become aware of it and even begin to utilise it. However, participants also made a distinction between workshops that were well run, targeted to their needs and applied, and those that appeared as vehicles for people to expound their ideas, PR exercises, or a way of meeting funding obligations.

3.5.7 Keep material open-access

Participants observed that it was important that material was available to both professionals and the public. An example cited was the cost to license the Flood Risk Management Standard (Standards New Zealand, 2008), that meant it was cost-prohibitive to allow open-access with the public, therefore making it difficult to incorporate it into a public process.

Prompts for improving the uptake of guidance

- Place it where it will be seen – most participants use Google key word search as their primary way of locating information.
- A central reference point, clearing house or web-based natural hazard management resource network would improve user's potential to match information to their needs.
- Build networks and relationships – this is a two-way-street that requires effort by both the generators and the users of guidance material.
- Invite feedback and provide an easy means for this.
- Use multiple avenues to disseminate material.
- Keep material open access.

3.6 IMPROVING THE BIG PICTURE IN NATURAL HAZARD MANAGEMENT THROUGH GUIDANCE

The focus group interviews aimed to draw out the experiences of participants regarding natural hazard management guidance material, with a view to learning what actions those generating this material could take to improve relevance, accessibility, and usefulness. Some of the experiences of participants related to their perceptions and concerns about how the sector as a whole was served by the research community and by national agencies – who, in their view, were responsible for overall direction and leadership. This is the context within which guidance material is generated – and while it may be difficult for any one author to see how they can affect change in these matters, these are important signals for those working in this area.

3.6.1 Who is providing leadership and co-ordination?

We don't see the kind of thinking that we want to apply in natural hazard management out there.

Participants in a number of the groups identified a gap in strategic thinking about natural hazards. The question was raised as to who was, or should be, driving the progress of ideas about natural hazard management? This currently seemed like a missing role. While many considered this the responsibility of MFE, there was also some discussion about whether research agencies such as GNS Science or NIWA could fill this. Caveats that were noted included the lack of official government mandate of these agencies, their tendency to focus on their own parts of the natural hazard management situation, and to act in competitive ways. The Natural Hazards Research Platform – as a consortium of agencies with interlinked expertise and interest in natural hazard management, was also identified as a possible leadership agency.

Related to this question of leadership was a concern about coordination. The idea of a central repository or source for locating guidance material is discussed in Section 3.5 of this document. There was also concern about lack of coordination in how material is being generated, with a perception amongst participants that guidance documents are generated as individual pieces of work. This can result in duplication and inconsistencies in documents generated at different levels.

Again the competitive approach between research and consultancy agencies has meant that those publishing guidance focus on promoting their own material individually. Participants commented that it is not enough to simply reference each other's work. Each piece needs to incorporate and build on the work of others – regardless of the agency authorship.

Some participants went so far as to challenge those producing guidance materials (such as GNS Science) to think about what overall role they wanted to play in the natural hazard management field. As one participant stated:

I think GNS has to think about whether its providing guidance to assess the scale and even whether a threat exists; or whether it's going further and expressing its view on how policy should be made and even going further than that and expressing - almost guiding - what the policy decision ought to be....maybe in conjunction with other parties.

3.6.2 Who drives the need for guidance?

During the focus group interviews the following questions were raised –

- Who drives the need for guidance?
- What is their mandate?
- What is their link to national practice and what are their goals? and
- Is it some researcher *filling a hole* - or is it driven by the needs of the sector?

As one participant expressed it – the *push and pull* drivers of guidance are important in how guidance meets needs and is received.

Depends on whether there is a push or pull strategy here. If users want something and they say 'what we really need is some sort of guidance on X Y Z' and you produce it then it is generally welcomed with open arms. But if there is just push strategy of somebody says... 'wouldn't it be a great idea if I did this' and you push it out - people say 'What am I going to do with this'?

Conversations need to take place between the producer and users of guidance, to ascertain what is required, in what format, with the aim of achieving a specific outcome.

3.6.3 Making up for the deficiencies in legislation and national policy

Some of the comments from participants suggest that there are concerns about how, in the absence of clear, directive guidance material from mandated agencies (primarily central government), the trajectory for natural hazard management was being primarily directed by RMA case law. Discussions in the focus groups expressed concern about this reliance on testing through the Environment Court and subsequent case law. While it was never specifically mentioned, there seemed to be hope that guidance material produced elsewhere could make up for the deficiencies in New Zealand legislation, and the absence of national policy on natural hazards.

Prompts for improving the big picture of natural hazard management guidance

Several contextual elements are important to the development of guidance in natural hazard management

- More strategic thinking promoted by better leadership and coordination in the sector.
- A balance between 'push and pull' in the development of guidance material.
- Producers and users of guidance need to discuss the purpose of guidance before it is drafted.
- Guidance material that recognises and responds to the gaps in legislation and national policy in natural hazard management.

4.0 CONCLUSIONS

Keep it simple. Don't try to impress the world that you have knowledge

In undertaking a review of how natural hazard management guidance for land use planning can be improved it is easy to focus on the short falls. However, in the focus group interviews participants expressed appreciation for many different sources of guidance including:

- Publications;
- Websites;
- Workshops; and
- One-on-one interactions with researchers, colleagues and other professionals in the field.

Nonetheless, it was not hard to see that there was an appetite for better guidance material. The enthusiasm for attending the focus groups (which was notable) was testament to this, as was the readiness of participants to discuss their experiences.

The focus groups revealed many ways in which guidance material could be improved. These include providing greater clarity of purpose, paying more attention to target audiences and their needs, providing content that is grounded in real cases or generated in collaboration with end users who know the realities of applying material. Participants view on the way guidance is presented indicated the importance of providing good logical and easily navigated structure to documents. Improving guidance also requires attention to what happens after it has been produced including, how it is made accessible, how potential users can locate it and interrogate it – at a time when it is most needed by them. Participants also had much to say about what gives guidance credence and validity. Namely, how this is conferred by more than simply recognised and qualified authors but requires the process for generating the material to have ensured it is well tested and grounded in the correct legislative and policy context.

Participants' experience with guidance material suggests the prevalent thinking is that guidance begins and ends with putting out a report. Furthermore, amongst those providing guidance, there has been, to date, too little examination of what have become standard practices for information generation and dissemination, and whether these are meeting current needs. Some of the prompts for improving guidance provided in this document are relatively simple to implement – others require more thought and consideration of practices early on in the research and development process itself.

Participants had many wishes and hopes for guidance material. Notable amongst these is that it helps provide the sector as a whole with more strategic direction, better national consistency and enable them to 'lift the game' of natural hazard management in New Zealand.

Top ten tips for improving the development and uptake of natural hazard management guidance

1. 'Lift the game' - users of guidance are looking for material that will improve land use planning for natural hazards in New Zealand, including creating greater national level consistency, and strategic direction.
2. Include grounded examples, real cases, and reviews of what makes these applicable to different contexts.
3. Provide aspirational or new concepts but include consideration of the implementation issues.
4. Good structure is more important than document size. The following are essential: good summary; well-structured contents page; and separation of main points from technical or background information.
5. People expect to Google it – plan for a web interface, or navigable web-based content.
6. Be clear on purpose and audience - know who will use the guidance, understand their communication preferences – be clear what they will be able to achieve by using this guidance.
7. Use multiple communication approaches - guidance documents need to be part of a package of communication options that will appeal to different audiences – such as workshops, seminars, and road shows.
8. How you produce guidance affects its credibility – improve this by working with end-users in the development and ensuring it is grounded in the legislative and administrative realities of the situation.
9. Plan for on-going development of guidance – invite feedback, find out how it is being used and what could improve it.
10. Users of guidance have a role too - users of guidance need to be proactive about advocating for guidance on emerging issues, developing relationships with those undertaking research; and starting and maintaining active networks for information sharing.

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APPENDICES

APPENDIX 1: METHODOLOGY

Focus groups are a recognised methodology for acquiring a wide range of information through the open discussion of participants on a given topic (Morgan, 1997)¹. The 'Doing it better' focus group interviews were conducted in March and April 2013. Participants from the region were invited to meet in groups at five different locations:

- Dunedin;
- Masterton;
- Wellington;
- Hamilton; and
- Auckland.

Participants were from regional and territorial authorities and included land use planners, policy planners, CDEM staff, science and technical support staff.

In New Zealand, different regions have different demands, resources, and interests in natural hazard management. The selection of the five groups enabled the study to hear views from:

- The South and North Island regions;
- Regions with independent and unitary authorities;
- Large councils with a number of in-house services;
- Smaller councils that do not have access to the same expertise in-house; and
- Urban and rural based councils.

While each focus group had its own flavour, the summary of findings has chosen to concentrate on those messages that were most commonly shared across the groups.

The organisation and invitation to each group was largely left to a primary contact in a regional authority. Participation was largely therefore self-selecting. This was not regarded as a concern because the study wanted to access the views of those with the greatest interest in the topic. Focus group participation was good – ranging from four to ten people in each group.

Each focus group was attended by the facilitator (independent research contractor – Dr Margaret Kilvington) and a natural hazard planner from GNS Science – Dr Wendy Saunders. The focus groups were recorded for the purposes of analysis, with consent forms signed by those participating (ethics approval process was followed).

Participants were sent consent forms prior to participating. They were also sent links to a range of natural hazard management guidance documents from different authors and agencies. A range of questions for the groups was prepared (see Appendix 2) and these questions were posed by the facilitator in differing order depending on the flow of the conversation.

¹ Morgan, D.L., 1997: *Focus Groups as Qualitative Research*. Qualitative Research Methods Series, Volume 16, Sage Publications.

APPENDIX 2: FOCUS GROUP SCRIPT AND QUESTIONS

<p>Introduction: 10 mins</p>	<ul style="list-style-type: none"> • Welcome, thank them for time – say will be between 1 – 2 hours total (depending on how much they have to say!). • Explain purpose of focus groups: Small project aimed at improving the usefulness of guidance material on natural hazard management provided by GNS and others for local government. This is one of the key ways in which the science research is synthesised and made available to people on-the-ground. Because we are aware that there is mixed reception for this material – sometimes seems to be very well used – other times not so much. This project has been funded by GNS and by EQC but we are providing the information for other producers of guidance material e.g. MFE – and we won't just look at GNS's material. • This group today is one of 5 different groups we will be talking to around the country, • The group will be conducted as a discussion – based on some prompting questions - no right or wrong answers – we are just interested in your experiences. • We would like to record this discussion because we simply can't take notes fast enough. The recording will only be used for producing a report and set of recommendations. We might find it useful to use your direct words but they won't be attributed to any individual or group. The record of the discussion will be deleted at the end of the project. Is everyone here ok with that? [check for signed consent form] • A copy of the final report will be made available to everyone who took part and will be passed on to.....? • Are there any questions? <p>Who is here? Introductions....</p>
<p>Question 1</p>	<p>When we use the term 'guidance material for natural hazard management' – what immediately comes to mind?</p> <p><i>Supplement prompts</i></p> <ul style="list-style-type: none"> • Check for different sources.....e.g. MFE, GNS, NIWA, MCDEM....other? • Check for different medium...e.g., web-based, CD ROM (does anyone use them anymore?), paper? • Check for internal vs. external sources....e.g., do they consider things from their own Regional Council/District Council?
<p>Question 2</p>	<p>Of the material that has come to mind – what about it was memorable?</p> <p><i>Supplement prompts</i></p> <ul style="list-style-type: none"> • Was it particularly useful? / Did you make direct use of it? • Easy to access? • How did you find out about it? • Was there any opportunity for you to discuss it with others – e.g. workshop, internal meeting? • Why do you think this came to mind?

Question 3	<p>Can you think of a time when you have been seeking resources to help you in a natural hazard management planning process? Tell us what you were looking for and what you found.</p> <p><i>Supplement prompts</i></p> <ul style="list-style-type: none"> • Where did you first look? • Did you find material that was useful to you? • What was missing? What would you have really liked to find – but didn't?
Question 4	<p>Can you think of any guidance material that you have not found useful – why do you think this is the case?</p> <p><i>Supplement prompts</i></p> <ul style="list-style-type: none"> • What makes a source of guidance material trustworthy in your view? • Does it matter who is hosting the guidance material? • Do you have examples of guidance material that contradicts other material?
Question 5	<p>Do you have any examples of guidance material/resources that you have used from areas other than natural resource management that you think are good models for how guidance material should be produced?</p>
Question 6	<p>What do you think the purpose of guidance material should be:</p> <ul style="list-style-type: none"> • To simplify natural hazard science for use in land use planning? • To help you formulate your problem? • To provide steps and tools for addressing natural hazard management? • Other?
Question 7	<p>When you have a question about some guidance material do you ever call the authors to discuss it?</p> <p><i>Supplement prompts</i></p> <ul style="list-style-type: none"> • If yes – how did that go? • If no – what stops you? • Do you talk to anyone else about it?
Question 8	<p>Do you think there are any areas/topics in natural hazard management that don't receive enough attention from those who produce guidance material?</p> <p>What are these areas?</p>
Question 9 (always ask last)	<p>If you had any message for those who produce guidance material for you to use – what might that be?</p>
W. Saunders questions	<p>Specific questions about guidance documents; use of flow charts; use of logos</p>

A2.1 OPTIONAL QUESTIONS – DEPENDING ON FLOW OF DISCUSSION

Question	<p>If you are seeking resources to help you with a planning/management issue where do you usually start?</p> <p><i>Supplement prompts</i></p> <ul style="list-style-type: none">• Why do you start here?• Where next?• Does the first place you look usually lead you to other sources?• Any other places you would look or people you would call?
Question	<p>Of the guidance material you have used – how often do you find that it directly addresses the problem you are addressing?</p> <p><i>Supplement prompts</i></p> <ul style="list-style-type: none">• Examples of when this happens
Other questions	<ul style="list-style-type: none">• If you have attended a workshop that has introduced the guidance material to you – do you find you are more likely to use it?• Have you or any of your colleagues ever been involved in the development of guidance material? – Does this influence how much use you make of it?