

Guns, chocolate and high heels: Communicating
earthquake risk and building resilience in
Wellington, New Zealand

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ABSTRACT:

1.0 INTRODUCTION

In August 2012, Wellington City Council organised a series of community briefings entitled “Wellington Rocks” to discuss earthquake risk. As part of the briefings, GNS Science scientists were invited to inform members of the public regarding the recent results of the Wellington “It’s Our Fault” project (see Appendix A for further details of the project).

The presentations were 1.5 hours long and included topics regarding earthquake risk (GNS Science), building and infrastructure resilience (Wellington City Council), and emergency preparedness (Wellington Emergency Management Office). A short film about the earthquake risk in New Zealand was also presented. At the end of the presentations, there was a Q and A session for questions. Afterwards, attendees could discuss issues further with any of the presenters with refreshments provided.

2.0 METHODOLOGY

Given the scale of the community meetings (20 in all) and the potential for social science research, meeting attendees were invited to complete a questionnaire to gauge the effectiveness of this kind of community engagement. Community members were surveyed prior to the start of the meeting and directly afterward. This report (1) provides a summary of the survey that was undertaken; (2) outlines the findings regarding the feedback from participants directly after the presentations; and (3) provides recommendations based on the data for future community engagement project.

A survey was designed to assess the impact of the “Wellington Rocks” community meetings on meeting attendees. The survey consisted of two separate components.

The first component of the survey, Part 1 - questions 1-8, included a list of community resilience indicators, as informed by prior resilience research (Becker, 2012; Paton, 2010; Paton & Johnston, 2006). These questions were asked in order to inform future research regarding the overall resilience of Wellington City. The questions related to this work will be analysed at a later date, and are not discussed in this report.

The second component of the survey consisted of attitudinal questions, Part 2 - questions 1-7. Questions were asked specifically around how well received the presentations was. These questions were:

- Q.1 How useful did you find the information included in the briefing?*
- Q.2 Was there anything in the presentation that you didn’t understand?*
- Q.3 Was there anything about the presentation you particularly liked?*
- Q.4 Was there any information that you felt was repetitive or could be removed from the presentation?*
- Q.5 How do you feel about the Council’s future city resilience work programme?*
- Q.6 How do you feel about living in Wellington after viewing the presentation?*
- Q.7 Do you have any other suggestions to improve the presentation or further comments?*

The preliminary findings for Part 2 of the survey are contained in this report. Completed surveys were viewed briefly by the organising/presentation team after each presentation and changes were made to the presentation based on the feedback in the earlier surveys. A presentation by the Wellington Regional Emergency Management Office (WREMO) was added after a month of meetings, based on the feedback of these surveys. Due to the changes in presentations, the data set from Part 2 is variable.

The survey was initiated on 23 August 2012 at the first meeting in Johnsonville, a large suburb of Wellington. The surveys were placed on chairs at the meeting and the first presenter asked attendees to fill in the survey (Part 1) before the presentation began and then the second part (Part 2) after the presentations had finished. The survey was on one sheet of paper, double sided.

Most respondents filled the surveys out themselves; however, some did require assistance from their neighbours or partners. Anecdotally, some couples filled out one form together rather than separately. More than 120 surveys were received from respondents who attended the Johnsonville meeting. The last community meeting was held on 7 November 2012. Approximately 1200 people attended the meetings; 763 surveys in total were completed. This article will summarise the findings across all locations, rather than by specific meeting.

The research was focused on feelings and attitudes of respondents. This survey did not ask questions regarding demographics or weighted the responses by locality or timing of presentations.

As discussed earlier, this report will only report on the findings for questions in Part 2, Q. 1-7.; the other questions contained in the survey will be analysed at a later date. Note: all percentages have been rounded.

3.0 Results

This paper only covers the findings for questions in Part 2, Q. 1-7. *Note: all percentages have been rounded.*

Q1. How useful did you find the information included in this briefing

Number of respondents who answered this question: 748 (n).

Table 1 lists the number of responses in a given “usefulness” category, and it also list the rating neutral, and the total number (N) of people who answered the question. Of 748 respondents to this question, 34 percent found the presentations very useful and 49 percent found the presentations useful, meaning that 83 percent of all respondents found the presentations overall, useful. Only 0.3 percent and 2 percent found the presentations not useful or not useful at all. Neutral was chosen by 16 percent of respondents.

Table 1 Q1 summary of findings.

Not useful at all (1)	Not useful (2)	Neutral (3)	Useful (4)	Very useful (5)	Rating Average	N
2	13	114	363	256	4.15	748

Conclusion

The rating average is the average score of all the responses. This score, at 4.15 out of a possible five, with five being very useful and one being not useful at all, illustrates that on average, most people found the presentation between useful and very useful.

Q2. Was there anything about the presentation that you didn’t understand?

Number of respondents who answered this question: 197

This question was open ended and many respondents (84 out of 197) stated “no” as their answer (i.e. indicating that they felt they had a good understanding of the presentations). Of those who did not understand something about the presentations, comments included questions about risk and the WCC

resilience building project. Below is a sample of answers that are representative of some of comments regarding understanding of the presentations:

- “I felt some information has been omitted to minimize fear or panic”
- “What is the actual meaning of 33 percent of the earthquake code?”
- “How much will it all cost the ratepayers?”
- “Scope of council building inspection programme-what criteria are there?”
- “GNS presentations did contain a number of technical terms.”

Conclusion

Key themes that arose from those who did answer included people wanting more information about emergency preparedness, about what Civil Defence was doing, and there was some moderate confusion over technical or scientific terms. Some of these issues were addressed later as attendees could ask questions of the presenters after the session.

Q3. Was there anything about the presentation that you particularly liked?

Number of respondents who answered this question: 531

This question was opened ended, similar to question Q2, but more responses were received. The main word themes were:

- GNS (mentioned 84 times by participants), Russ (one of the GNS presenters) (27 times), and Geological (13 times) were grouped together. This was the most frequently quoted group.
- WCC (32 times), Neville (one of the WCC presenters) (32 times), Council (12), Humour (19), and Resilience (17) were also quoted and grouped together.

Below is a representative sample of answers given by respondents:

- “Clarity of speakers and slides, passion of Russ, humour of Neville.”
- “Variety of speakers and generally good visual support. Humour was helpful and gentle.”
- “Reassurance about what WCC is doing regarding the earthquake risk.
- “The stats, Rob appeared well informed and had a nice easy style. Earthquake strengthening about the house is REALLY useful.”
- “Mr Brown analogies – shoes and chocolate bars brought home the message.”

Conclusion

Respondents who answered this question seemed to like the mixture of science presenters, resilience work from WCC and the humour that put risk into context.

Q4. Was there any information that you felt was repetitive or could be removed from the presentation?

Number of respondents who answered this question: 223

This question, like Q2 and Q3, was also opened ended. Of the 223 who answered the question, “no” was in the answer 103 times. None of the major theme words were particularly significant. The four main terms were:

- Presentation: 13 times
- Neville: 12 times
- Council: 9 times
- Needs: 9 times

Below is a sample of answers given by respondents to illustrate attitudes:

- “Neville's presentation was just a wee bit too long-maybe shave off some slides? Relative risk statistics aren't that helpful.”
- “Distinguish Mercalli/Ritcher scales near the start to help clarify which is being referred to.”

Conclusion

There were not enough similar terms used by respondents to generate any broad generalisations or themes for this question.

Q5. How do you feel about the Council’s future city resilience work programme?

Number of respondents who answered this question: 750

Table 2 lists the number of respondents who answered the question regarding the future building resilience work of the WCC. The majority of respondents reported feeling positively about the WCC resilience work programme with **87 percent feeling positive or very positive**. Only one respondent (0.1 percent) reported feeling very negative about the programme and 10 respondents (1 percent) of the sample, feeling negative. 13 percent felt neutral about the programme.

Table 2 Q5 summary of responses

Extremely Negative	Negative	Neutral	Positive	Extremely Positive	Rating Average	N
1	10	95	465	179	4.08	750

Conclusion

The vast majority of respondents found the programme useful or very useful (87 percent). The rating average (4.08), with five being extremely positive and one being extremely negative, shows that on average most people felt between positive and extremely positive about the presentations.

Q6. How do you feel about living in Wellington after viewing the presentation?

Number of respondents who answered this question: 730

Table 3 lists the number of responses given regarding how worried people were after the presentation prior to before. Of the respondents that answered this question, **70 percent reported feeling either**

positive or extremely positive about living in Wellington. This question had a higher percentage of neutral answers at 26 percent. Approximately 3 percent reported feeling worried and only 6 respondents, 1 percent of the sample, reported feeling very worried.

Table 3 Q6 summary of responses

Very Worried	Worried	Neutral	Positive	Extremely Positive	Rating Average	N
6	24	190	377	133	3.83	730

Conclusion

More than 70 percent of respondents reported feeling positive in some form about living in Wellington. The presentation’s aim was to assist people in either feeling more neutral or positive, rather than feel worried, and this survey confirms the presentation was pitched at the right level. The rating average was 3.83, which means that with five being extremely positive and one being very worried, on average, people were between neutral and positive.

Q7. Do you have any other suggestions to improve the presentation or further comments?

Number of respondents who answered this question: 321

Terms like “community” (26 times) and “local” (27) were the most quoted as being a way to improve the presentation. This would seem to indicate that people wanted more localised information in the presentation. The term “no” was quoted 34 times.

Examples of suggestions:

- “A little more detail locally about the tectonic plates, faults and their relationship effect on Wellington.”
- “Some discussion on post-earthquake conditions e.g. social problems, everyday living in post-earthquake environment.”
- “More local information: Local maps of liquefaction/landslide/tsunami risks for the suburban question.”
- “Mention the role of EQC. Clarify what "the blue line" is for!”

Conclusion

The most common suggestions were regarding providing more local context or information. One or two slides regarding local geology or the impacts of an earthquake locally may have been useful for participants. Also, respondents wanted to know more about what impact an earthquake might have on their lives, and the consequences of that impact.

Q8. Contact information

Out of the 763 respondents, 300 gave contact information to be contacted further by researchers.

4.0 Recommendations

Local information

Overall respondents reporting feeling that the presentations were useful; however, there were multiple references to having more local information available. It would have been helpful to have local geological information, local information about impacts/consequences (including infrastructure effects), and local preparedness information. This could be achieved through future meetings and interactions with the public.

CDEM Planning

The Wellington Region Emergency Management Office (WREMO) was mentioned repeatedly as being a group who could have provided more information, especially in a local context, however it is important to note that this may have been prior to the inclusion of WREMO's longer presentation. It is recommended that WREMO continue community engagement through meetings and other methods with the public, regarding preparedness and community resilience building activities.

Guns, chocolate and high heels (the analogies)

Several analogies were used during the course of the presentation including:

- Comparing the earthquake risk to a game of Russian roulette. This was used to illustrate how the risk had gone down from before but was still dangerous. (GNS presentation)
- Illustrating the difference between Auckland and Wellington building standards, stilettos high heels and black boots were used, indicating both are stylish but one is more stable and practical for the risk. (Wellington City Council presentation).
- Comparing building prior to changes in the Building Code in the 1970s, Crunchie bars were used versus Moro Bars, indicating one was more ductile than the other. (Wellington City Council)

From the feedback, the analogies were a popular addition to the presentation. By contextualising the risk and elements of building resilience, people seemed to gain a better understanding of the issues around the building code and the fault risk. The chocolate bar analogy seemed to be the most popular, given the feedback. Future risk community engagement programmes in Wellington should include analogies and humour to help with understanding the information presented.

Interaction (Q and A)

Community members reported valuing the Question and Answer (Q and A) component of the presentation as it allowed them to have their specific concerns answered. Q and A should be part of any future engagement project. One recommendation would be to project ahead what questions may be asked and to have an answer prepared so that speakers are consistent with their replies.

Multi format

Comments and suggestions around having multiple media and speakers seemed very positive. Having four different speakers meant that the public did not seem to get too bored or distracted. The movie was

also popular amongst respondents, given the comments, to assist with the “scene” setting regarding earthquake risk throughout New Zealand.

Publicity

The initial meeting at Johnsonville had a high attendance, while the other meetings had lower numbers in attendance. There could be a variety of factors contributing to this including smaller community catchment areas, or less publicity after the initial media announcements. Anecdotally, community members commented on publicity being a factor. To encourage greater attendance at future meetings, greater publicity in local or community papers should continue as the meetings progress. It is difficult to keep the public’s attention over the span of two months; however, there should be more work regarding keeping the public informed of these meetings.

5.0 Summary

The research and recommendations above are based on best practice research and experience of the GNS Social Science team. Other questions asked in Part 1 of the survey will be analysed in subsequent research, and a follow-up survey is also planned regarding respondent’s memory of the presentation and what actions they have taken since the meetings.

The format of the briefings may be of further interest in a global setting for other urban areas which have similar hazard profile to Wellington, New Zealand and, given the positive feedback from community members, could assist in creating a model for best practice in the future.

References

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