



“ I can live with this”

Bay of Plenty Regional Council public engagement on ‘acceptable risk’

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Based on work by Martin Butler, Kerry Gosling, Namouta
Poutasi, Stephanie Macdonald – Bay of Plenty Regional Council

*"Risk based
planning"*
Envirolink
2011- 2013

Bay of Plenty Regional Council

"Write up"
It's our fault
2015- 2016

GNS Science SSIF
2015-2016

Hazards platform
2016-2017

"Guidance on guidance"
It's our fault 2013

NZPI "Best
practice" 2017

Commonwealth
Institute of
planning 2018

Queenstown
District council

Kaikoura District
Council.....

Journal
Disaster Prevention and
Management

"I can live
with this"
Report

National
SCIENCE
Challenges

RESILIENCE
TO NATURE'S
CHALLENGES

Kia manawaroa
– Ngā Ākina o
Te Ao Tūroa



The Challenge: Taking a risk-based approach to the BOP RPS (Hazards Chapter)

$$\text{Risk} = \text{Likelihood} \times \text{Consequence}$$

- Differs from historic practices - *focus on presence and level of the risk rather than the presence and likelihood of the hazard.*
- Considers scales of a natural hazard event, likelihood and consequences (*e.g magnitude of earthquakes intensities of floods*), together with likelihood of that event occurring and the effects that it would cause, (*people (life and injury), infrastructure, property, and economic/livelihood*).
- Level of land use controls matches level of risk – *higher the risk the more control (can happen even if likelihood is low – if consequences would be high).*
- Land use controls based on risk thresholds “acceptable”, “tolerable”, “intolerable”

‘Acceptable risk’ - not a technical decision alone – needs understanding about community views on what they expect to live with and what they want councils to take measures to manage

The Challenge: Talking to people about risk in land use planning

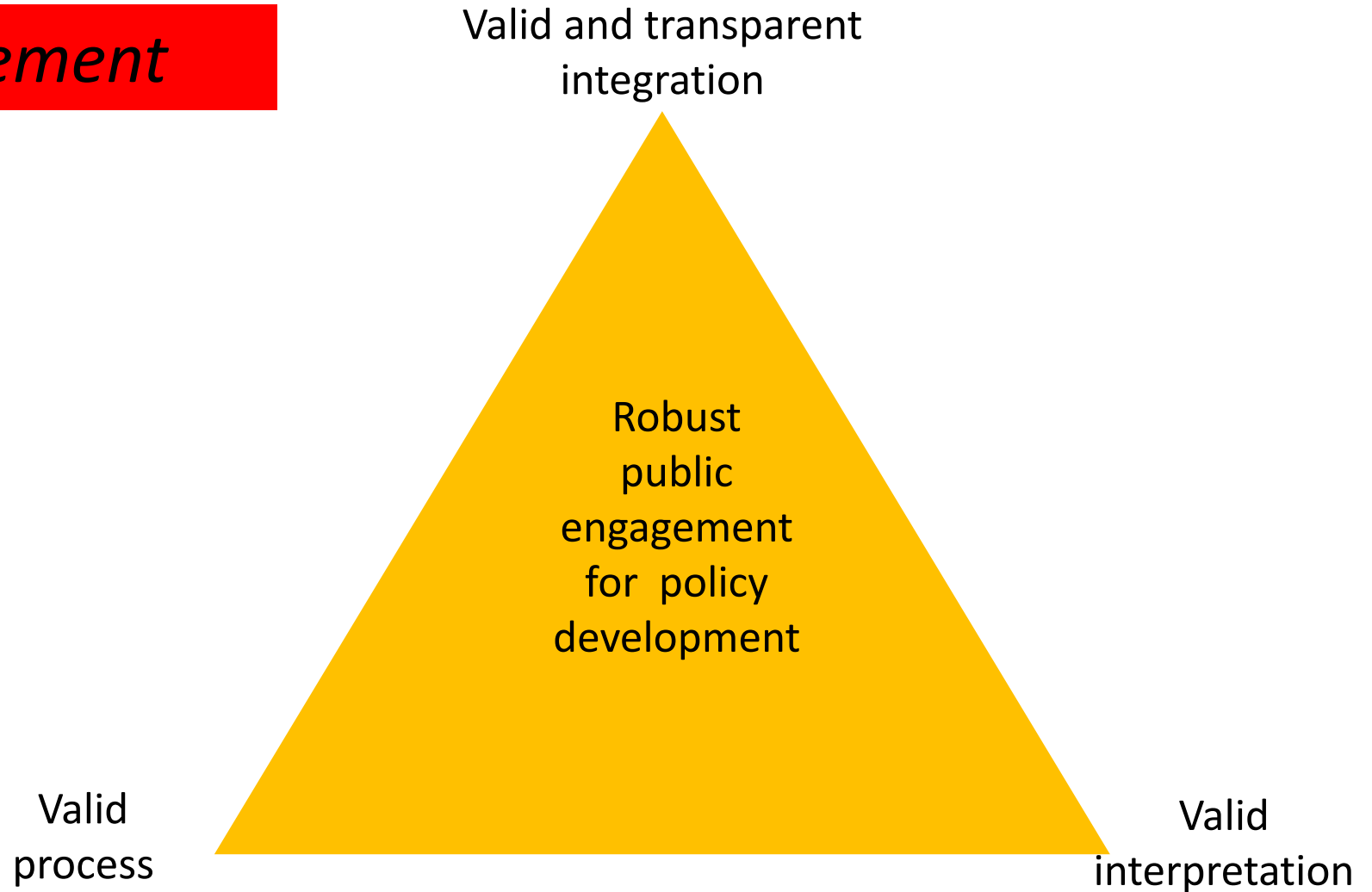
- Not just communicating hazard information – *asking people to weigh up possible future costs "vs immediate gains...asking for JUDGEMENT*
- Fear that people can be too optimistic: *accept risks that have severe consequences for future– because of investment in the now.*
- **Want meaningful information** that can be incorporated into a policy/plan decision alongside technical information
- Want it to contribute to the **robustness** of that decision



Can't just up and ask them what they think!

“I can live with this: Bay of Plenty
public engagement on risk

Defining *robust engagement*



Bay of Plenty engagement on acceptable risk

Defining “acceptable risk”

Acceptable risk:	<p>Definition: Risk that people are prepared to live with knowing that no measures will be taken to reduce it.</p> <p>Everyday description: <i>Part of daily life – these things happen</i></p> <p>Policy: All future activities should fit within this threshold</p>
Tolerable Risk:	<p>Definition: Risk that people are prepared to endure because of the benefits of the activity but expect measures to be taken to reduce it.</p> <p>Everyday description: <i>when it’s awful but you know that your family and community can recover from it in time</i></p> <p>Policy: measures should be taken to reduce the risk for existing activities that fit within this threshold.</p>
Intolerable Risk:	<p>Definition: Risk that people are not prepared to endure regardless of the benefits of the activity.</p> <p>Everyday description: <i>NO WAY – risk is so great that it can’t be justified.</i></p> <p>Policy: Activities will not be permitted within this threshold except in limited unpreventable circumstances (e.g., ports by their nature may be unavoidably located in high risk areas)</p>

BOPRC descriptors for risk

“I can live with this: Bay of Plenty public engagement on risk

*“We want to get a feel of the regional community’s
tolerance to hazard risk”*



- Cross expertise project planning workshop/steering group
Region, city and district councils (planning, coms, engagement CDEM, iwi liaison)
- Strong principle based design – *IAP2 & best practice in risk communication*
Trialled survey approach in-house – not satisfactory
- Recognised uniqueness of task - got more time – *(not more money)*
- 12 Community sessions – “like focus groups”
 - Separate iwi/hapu hui
 - Urban/rural/coastal community sessions.
 - Open to all but low barrier entry
 - Special “invited parties session”
- Later added other sessions... ‘lifelines’, Early childhood, Youth Jam

“I can live with this: Bay of Plenty public engagement on risk

5 step session format

1. Presentation & discussion (*Inform & familiarise with natural hazard risk in BOP*)
2. Questions on council responsibility (*consider expectations/create links to actions*)
3. Scenario matrix – “I can live with this” – based on RBPA – links consequence scenarios with likelihood (*appraisal of risk profile*)
4. Revisit responses – (*any change of heart?*)
5. Where to from here? – (*connect to further opportunities/information*)



- Based on IAP2 principles & best practice risk communication
- Designed to build capacity for judgement
- Grounded people in both likelihood & consequence
- Linked to policy action – “what does acceptable mean?”
- Generic across hazard
- Personal but not specific
- Engaged the public imagination – around a difficult topic

Valid process

Scenario matrix – Key tool

- Used descriptors from Consequence table and Likelihood table of Risk Based planning toolkit
- Converted into meaningful scenarios describing events of different severity over a lifetime and beyond
- Were these “acceptable” “Tolerable” or “intolerable”?
- Same format for community, lifelines & technical views

BOPRC – community sessions on risk and natural hazard management – worksheet					
I can live with this risk....					
Your councils could spend millions of dollars and set new rules to protect the community from all sorts of natural disasters, but some of those disasters might not happen for another 1,000 years. Or, they might happen tomorrow. That’s the risk. How much do you think we need to plan for?					
Nothing we do is free from risk, so how often do you think the community would put up with each of these disasters? (before marching into the council to politely but firmly suggest that they should never happen again?) <i>We have based these assumptions of lifetime on an 80 year lifespan.</i>					
<div>Think of an event that could happen in your community then apply this image when working through this table - read the scenario then scroll across the page and mark your thoughts in each space using the symbols as per below:</div> <div>• <i>Acceptable</i> - this is part of life that I could put up with</div> <div>✓ <i>Tolerable</i> - my family and community could recover in time if we had to</div> <div>✗ <i>Intolerable</i> - NO WAY - this risk is too great. It can't be justified</div> <div>Consequences</div>	Likelihood				
	Once every 50 years (Likely)	Once every 100 years (Possible)	Once every 100-1000 years (Unlikely)	Once every 1000-2500 years (Rare)	More than 2,500 years (Very Rare)
	90% chance for me	80 - 90% chance for me	15-80% chance in my and my grandchild's lifetime	5-15% chance in my and my grandchild's lifetime	Less than 5% chance in my and my grandchild's lifetime
	(V) The natural event is catastrophic. Nearly half of the liveable homes are wiped out. Some can be rebuilt but many can never return. One quarter of hospitals/marae etc have been badly damaged and are unable to be safely used. Many are beyond repair. It kills over 100 people. Businesses and livelihoods are lost. [up to 10% GDP or annual income]				
	(IV) Up to a quarter of schools, hospitals and marae have been damaged (and are struggling to function). Half of the homes in your community have been damaged, some of those can be rebuilt but many can't. It may take up to six months to fix the water and roads. Over 10 people died with more than 100 injured. About 20% of the town centre will be closed off for anything from a week to a month. [10% of GDP or annual income]				
	(III) In your community of 1,000 homes about 60 - 100 houses are unliveable, the natural event knocks out power and water networks. For a week daily life revolves around getting bottled water and queuing up at the portaloos. Some businesses can't open. The natural event injures up to 100 people. [1% of GDP or annual income]				
	(II) This event has affected 20 - 100 houses in your community of 1,000, with the local marae and school out of action for up to a day and the town centre is closed briefly. The hospital is able to function but has some damage. You may need to use a bucket for the toilet for the day. No-one died but 10 people were injured.				
	(I) You have had a big fright from this event but basically there has been no real damage and the local shops were only closed for a couple of hours. No-one was injured.				

Severity of Impact	Built				Economic	Health & Safety
	Social/Cultural	Buildings	Critical Buildings	Lifelines		
Catastrophic (V)	≥25% of buildings of social/cultural significance within hazard zone have functionality compromised	≥50% of affected buildings within hazard zone have functionality compromised	≥25% of critical facilities within hazard zone have functionality compromised	Out of service for > 1 month (affecting ≥20% of the town/city population) OR suburbs out of service for > 6 months (affecting < 20% of the town/city population)	> 10% of regional GDP	> 101 dead and/or > 1001 inj.
Major (IV)	11-24% of buildings of social/cultural significance within hazard zone have functionality compromised	21-49% of buildings within hazard zone have functionality compromised	11-24% of buildings within hazard zone have functionality compromised	Out of service for 1 week – 1 month (affecting ≥20% of the town/city population) OR suburbs out of service for 6 weeks to 6 months (affecting < 20% of the town/city population people)	1-9.99% of regional GDP	11 – 100 dead and/or 101 – 1000 injured
Moderate (III)	6-10% of buildings of social/cultural significance within hazard zone have functionality compromised	11-20% of buildings within hazard zone have functionality compromised	6-10% of buildings within hazard zone have functionality compromised	Out of service for 1 day to 1 week (affecting ≥20% of the town/city population people) OR suburbs out of service for 1 week to 6 weeks (affecting < 20% of the town/city population)	0.1-0.99% of regional GDP	2 – 10 dead and/or 11 – 100 injured
Minor (II)	1-5% of buildings of social/cultural significance within hazard zone have functionality compromised	2-10% of buildings within hazard zone have functionality compromised	1-5% of buildings within hazard zone have functionality compromised	Out of service for 2 hours to 1 day (affecting ≥20% of the town/city population) OR suburbs out of service for 1 day to 1 week (affecting < 20% of the town/city population)	0.01-0.09 % of regional GDP	<= 1 dead and/or 1 – 10 injured
Insignificant (I)	No buildings of social/cultural significance within hazard zone have functionality compromised	< 1% of affected buildings within hazard zone have functionality compromised	No damage within hazard zone, fully functional	Out of service for up to 2 hours (affecting ≥20% of the town/city population) OR suburbs out of service for up to 1 day (affecting < 20% of the town/city population)	<0.01% of regional GDP	No dead No injured

Risk Based planning: Consequence table

Level	Descriptor	Description	Indicative frequency
5	Likely	The event may occur several times in your lifetime	Up to once every 50 years
4	Possible	The event might occur once in your lifetime	Once every 51 – 100 years
3	Unlikely	The event does occur somewhere from time to time	Once every 101 - 1000 years
2	Rare	Possible but not expected to occur except in exceptional circumstances	Once every 1001 – 2,500 years
1	Very rare	Conceivable but highly unlikely to occur	2,501 years plus

Risk Based planning: Likelihood table

Analysis & interpretation

- Analyse individual, group and combined responses from sessions (*look for divergence, anomalies, commonality*)
- Code up matrix – using key
- Provide overall summary for comparison with two other sources – “lifelines” & GNS Science technical expertise.

- Used **all** feedback from sessions to understand responses*
- Used “soft boundaries” in coding*
- Not an “averaged response”*

Valid interpretation

Community engagement response summarised & detailed

Likely 5	A 87% A 12%T	A/T 64%A 46%T 5% I	T/I 9%A 58%T 33% I	I- 3%A 20%T 77% I	A 2% A 5 %T 93 %I
Possible 4	A 100%A	A/T 64%A 33%T 3%I	T 19%A 61%T 20% I	I/T 6%A 26% T 68% I	I 3%A 5%T 92%I
Unlikely 3	A 100%A	A- 76%A 22%T 2%I	T/A 39%A 51%T 10%I	T/I 0%A 53%T 47%I	I- 6%A 19%T 75% I
Rare 2	A 100%A	A- 77%A 20%T 3%I	A/T 53%A 47%T 0%I	T/A?I 30%A 44%T 26%I	I/T 16% A 34%T 50%I
Very rare 1	A 100%A	A- 79%A 17%T 4% I	A/T 59%A 36%T 9%I	A/T?I 41%A 35%T 24%I	I/T?A 26%A 31%T 43 %I
	Insignificant I	Minor II	Moderate III	Major IV	Catastrophic V

Key devised to review the matrix responses

A	90% or more described this as acceptable or tolerable and the % who found it only tolerable was 10% or less
A-	70% or more found this acceptable. Those who found it tolerable was no more than 25%
A/T	70% or more found this acceptable or tolerable. The majority finding it acceptable. 50/50 is where % or respondents were even for both acceptable and tolerable
T/A	70% or more found this acceptable or tolerable. The majority finding it tolerable
T	Majority find this Tolerable – those who find acceptable or intolerable differs by 4% or less
T/I	70% or more found this tolerable or intolerable. The majority finding it tolerable
I/T	70% or more found this tolerable or intolerable. The majority finding it intolerable
I-	More than 70% found this intolerable and less than 10% found it acceptable
I	89% or more found this Intolerable or tolerable the % of who found it tolerable was 10% or less
?	This indicates the presence of a significant minority contrary voice– of 20% or more

Bringing the views together

- Three sources: Community, lifelines, GNS Science
- Four step process of comparing & reviewing shared views and points of divergence
- Judgement calls on non-aligned areas recorded

Valid & transparent integration

- *Able to compare opinions from different sources “apples with apples”*
- *Judgement & weighting in final decision made clear*

	Consequences														
Likelihood	Insignificant			Minor			Moderate			Major			Catastrophic		
	1			2			3			4			5		
	Community	Lifelines	GNS	Community	Lifelines	GNS	Community	Lifelines	GNS	Community	Lifelines	GNS	Community	Lifelines	GNS
Likely	87% A 12% T				42% A 47% T		58% T 33% I	68% T 26% I		20% T 77% I	11% T 89% I		5% T 93% I	100% A	
5															
Combined															
Possible		58% A 42% T		64% A 33% T	37% A 58% T		19% A 61% T 20% I	21% A 58% T 21% I		26% T 68% I	53% T 47% I		5% T 92% I	11% T 89% I	
4															
Combined															
Unlikely		84% A 16% T		76% A 22% T	84% A 16% T		39% A 51% T	53% A 47% T		53% T 47% I	16% A 74% T		19% T 75% I	16% A 58% T 26% I	
3															
Combined															
Rare				77% A 20% T			53% A 47% T	89% A 11% T		30% A 44% T 26% I ?I	74% A 21% T		34% T 50% I	53% A 42% T	
2															
Combined															
Very Rare				79% A 17% T			59% A 36% T	95% A 5% T		41% A 35% T 24% I ?I	84% A 16% T		26% A 31% T 43% I ?A	79% A 16% T	
1															
Combined															

Level of risk	
Acceptable	
Tolerable	
Intolerable	

Final result in the RPS

BOPRC recommended “other consequences” risk thresholds for RPS

	Consequences				
Likelihood	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
Likely 5					
Possible 4					
Unlikely 3					
Rare 2					
Very Rare 1					

Unique boundaries for thresholds of acceptable, tolerable and intolerable risk for Bay of Plenty Region

Level of risk	Colour/land use control level
Acceptable	
Tolerable	
Intolerable	

What's significant about the "*I can live with this*" BOP public engagement?



- Help develop practice: *Talking to communities about risk is a challenging area for local government agencies of growing importance*
- Tailored to meet specific policy decision need: *Linked “acceptable risk” to a policy outcome*
- showed that..
 - Upstream discussion's are possible
 - Conversations about risk are possible
 - Linking community and technical views on risk is possible
- Provided robustness for the plan around “acceptable risk”
- Showed importance of multi-discipline/agency team – *good relationship between planners and community development staff* – and design based on good principles
- ***Research & practice relationships are really important***

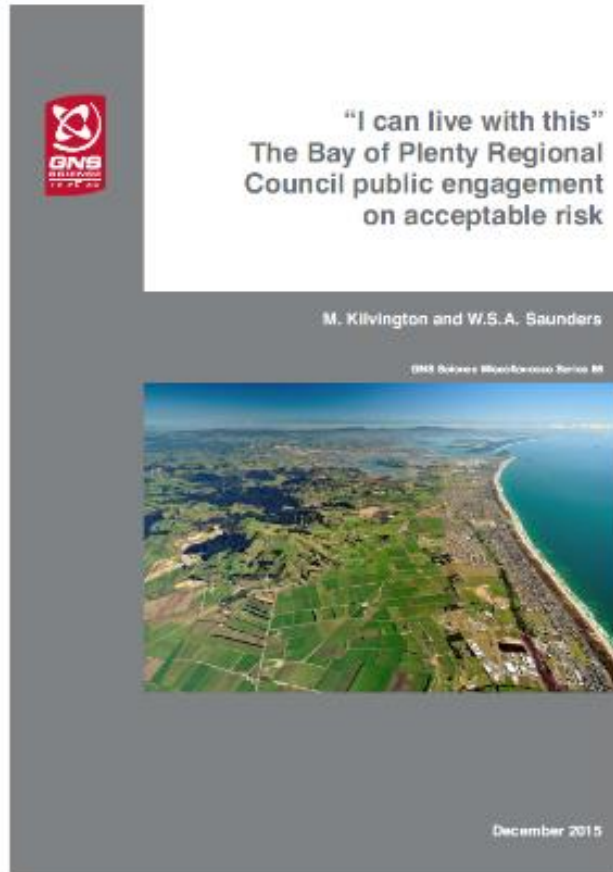
What Next?

- Risk and land use planning growing field
- This was about “abstract risk”..other situations
- Different council’s **adapting** these ideas to their own circumstances

Eg Queenstown District Council,
Kaikoura District Council...

- Important to use building blocks of engagement (context, history, type of decision)..and learn and develop as you go!





"I can live with this" The Bay of Plenty Regional Council public engagement on acceptable risk M. Kilvington W.S.A. Saunders

GNS Science Miscellaneous Series 86

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Resilience to Nature's Challenges & Natural Hazards Research Platform,
30-31 May 2019 M Kilvington *"I can live with this"*