

Consolidated comments from stakeholders on the exposure draft (version 0.B) of the National Emergency Risk Assessment Guidelines

Row	Submission	Section	Agency	Name	Comment	Suggested amendment	Project Team Response	Drafting reference #
(1)	1	General	Shire of Mundaring	Adrian Dyson	The NERAG document is a useful companion to AS 4360		Ok	NA
(2)	2	General	BOM	Alan SCOTT	As someone who has had no training or formal involvement in risk assessment I found this document useful in setting out a process despite the impression that it was a standard document that had been rewritten to meet the particular application.		Ok	NA
(3)	2	General	BOM	Alan SCOTT	Its main deficiency seemed to me that it was very prescriptive and did not attempt to give the reader any relevant examples. Perhaps the expectation is that users of the document will already be familiar with the basic process or will be given some formal training in risk assessment before attempting to apply the process.		Agree that the intended audience for this guideline will need to be familiar with the risk management processes/method. However, more examples will be included.	1
(4)	3	General	Department of Transport VIC	Donovan Croucamp	The process seems robust and compliant with AS/NZS 4360. It is well presented and guidance notes are comprehensive.		Ok	NA
(5)	3	5.2			Risk Statements. Beginning a risk statement with the phrase 'There is a risk that....' May not be useful as it is partly unnecessary but also excludes any qualitative descriptor which describes likelihood.	I suggest that the risk statements include initial qualitative descriptors as the risk is then more effectively described. e.g. It is likely that an east coast low.....	<b>Accept.</b> Agree that there is no requirement for risk statements to begin with "there is a risk that..." Risk statements should be identified in terms of "(something happening) leading to (impact / consequences)" <b>Reject.</b> Inclusion of qualitative assessments of likelihood within the risk statement is not necessary as it is the likelihood of a range of credible consequence scenarios that will be assessed during the risk analysis phase.	2
(6)	4	General	ABCB	Steve Hudson	There is no new technical guidance in the Draft Document in respect of the existing AS 4360 Risk Management Standard and in fact the document may create duplication and confusion.		<b>Reject.</b> For first pass assessments the guidelines introduce new approaches and tools including: <ul style="list-style-type: none"> <li>• Use of bow tie diagram in risk identification phase</li> <li>• Standardised risk criteria</li> <li>• Guided identification of existing controls during risk identification phase</li> <li>• Assessment on the adequacy of controls during risk analysis phase</li> <li>• Analysis of confidence in the risk assessment</li> <li>• Decision point for further analysis following risk evaluation phase.</li> <li>• Defining acceptable, tolerable and intolerable risks in the risk evaluation phase</li> <li>• Adoption of a ratio scale for consequence descriptors</li> <li>• Guidance on required outputs and risk currencies from detailed risk analysis studies</li> <li>• Comprehensive three module risk register</li> </ul>	NA





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(12)	5	Chapter 6 of Part 1 and Chapter 7 of Part 2	Opus	Ray Moore	<p>In my view both chapters would be more complete with specific notes on the content of the Risk Treatment Plan and the monitoring process.</p> <p>Standards Australia 2004 may well provide full information on the Risk Treatment Process however in the smaller areas (municipal and small Regional Councils) many people involved are volunteers with varying skill levels. The simpler and more direct the proposed action is in the final product of the assessment process, the more practical and effective it will be.</p>	<p>Include details of the essential information or data that the Treatment Plan must contain. eg Who or what organization is responsible for the required action.</p> <p>The Time Frame in which it should be undertaken.</p> <p>Who is responsible for monitoring and when and how often?</p>	<b>Agreed.</b>	8
(13)	6	General	Dept Water, Land and Biodiversity Conservation SA	Ed Pikusa	In general, the document is a great improvement on the previous version.		Ok	NA
(14)		5.3.3. p24			<p>Likelihood assessment.</p> <p>The illustrative assessment needs to be spelt out some more. It was a source of some confusion at the workshop trial. It indicates in the text that there are TWO likelihoods to consider and combine. This needs to be explained more clearly.</p> <p>As I see it, there is:</p> <ul style="list-style-type: none"> <li>• The likelihood of the event occurring; and</li> <li>• The likelihood of that event, when it occurs, precipitating a consequence</li> </ul> <p>These are then combined into a single likelihood. A clear procedure for doing this should be included to avoid confusion. For example, if a 100 yr ARI Flood ('Possible') is likely to cause some deaths ('Likely') what is the resulting likelihood, possible or likely?</p>		<p><b>Agreed.</b> The illustrative example on p24 in exposure draft 0.B is flawed and needs to be fixed. Additional guidance notes are to be provided on how factors such as:</p> <ul style="list-style-type: none"> <li>• Likelihood of the design event</li> <li>• Spatial relationships for event and elements at risk,</li> <li>• Adequacy of existing controls (ie likelihood of particular consequences),</li> <li>• Time frame for assessment, and</li> <li>• Lifetime of element at risk</li> </ul> <p>are to be considered when analysing the likelihood of particular consequences occurring for identified elements at risk for the selected design event.</p>	9

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(15)	7	General	SSU Tas	Carl Fulford-Smith	The draft Guidelines are a thorough methodology for the Risk Assessment process. However, it is still quite generic and hence is similar to existing documents that deal with the Risk Management/Assessment process. For example, the Emergency Risk Management Guidelines published by EMA.		<b>Reject.</b> For first pass assessments the guidelines introduce new approaches and tools including: <ul style="list-style-type: none"> <li>• Use of bow tie diagram in risk identification phase</li> <li>• Standardised risk criteria</li> <li>• Guided identification of existing controls during risk identification phase</li> <li>• Assessment on the adequacy of controls during risk analysis phase</li> <li>• Analysis of confidence in the risk assessment</li> <li>• Decision point for further analysis following risk evaluation phase.</li> <li>• Defining acceptable, tolerable and intolerable risks in the risk evaluation phase</li> <li>• Adoption of a ratio scale for consequence descriptors</li> <li>• Guidance on required outputs and risk currencies from detailed risk analysis studies</li> <li>• Comprehensive three module risk register</li> </ul> Additionally, once drafted there will be a section on detailed risk assessment which will provide a number of tools and approaches for improving the rigour and providing consistency for technical emergency risk assessments.	NA
(16)		General	SSU Tas	Carl Fulford-Smith	It is unclear whether these Guidelines are going to replace existing documents or support/enhance what already exists.		Ok. This speaks to a failure of the National Risk Assessment Framework Communications Plan which provides key messages regarding the outputs of the NRAF work plan including the new guidelines. The NRAF workplan and the Comms Strategy can be viewed from <a href="http://www.ses.tas.gov.au/role_of_ses/emergency_risk_management/nera.htm">http://www.ses.tas.gov.au/role_of_ses/emergency_risk_management/nera.htm</a>	NA
(17)		General	SSU Tas	Carl Fulford-Smith	It is stated that the Guidelines are to only address sudden onset hazard risk assessment. This may be too restrictive and consideration could be given to extending the Guidelines to cover all 'natural emergency events'.		<b>Agreed.</b> Section 1 is to be redrafted. Whilst the genesis of the guidelines was for sudden onset natural hazards, the methodology can be applied to a range of hazards and was tested during the pilot studies against hazards such as animal disease, pandemic influenza and major transport disruption emergencies.	10
(18)		General	SSU Tas	Carl Fulford-Smith	One of the main outcomes sought from this process is 'consistent, interoperable, measurable disaster risk assessments across all jurisdictions'. However, any 'outcome' that is decided by using the risk assessment process is determined by a number of value judgements. Accordingly, different regions and/or jurisdictions could decide on a different 'outcome'. And these different 'outcomes' could all be correct.		The guidelines seek to address this issue by providing standardised risk criteria contextualised for emergency risk assessments. Additionally, the guidelines will provide firm guidance on evaluation ie assessment intolerability, tolerability (subject to being ALARP) and/or broad acceptability of risk.	NA

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(19)	8	1.2 (Part 1)	SES Tas	Andrew Lea	The scope of NEGAG is limited to the specific framework for assessing risks, which is fine, but does not mention other important supporting project management principles, such as ensuring you have the necessary resources in place to commit to a risk assessment task (particularly a large one). This may include the resource requirements necessary to treat the risks, unless it has been made clear that this will be determined after the stated "risk treatment" stage. i.e. Risk assessments should not proceed without an expectation that certain risks may need to be treated – this may require considerable resources or funding. From experience with our TERMP, this should be a step for all key participants prior to, or during the early stages of "establishing the context".	Suggest including, "For large of complex risk assessments, in particular, participants should ensure they have the resources and time available to commit to each step of the risk assessment process in accordance with standard project management practices. There should be a clear understanding and a common view of all resource requirements before committing, including an expectation that additional resources/funds may be necessary by risk owners to treat the risks." Words to this effect could be repeated in Sections 1.2 and/or 3, and Section 7 of Part 2.	<b>Agreed.</b>	11
(20)		Figure 3 (Part 2)	SES Tas	Andrew Lea	The print within the bow tie diagram is too small.	Should be printed on A3 size paper	<b>Agreed.</b> Minimum font size in figures to be no less than 6 pt	12
(21)		Figure 4 (Part 2)	SES Tas	Andrew Lea	As above	As above	<b>Agreed.</b> Minimum font size in figures to be no less than 6 pt	12
(22)		5.2.2 (Part 2)	SES Tas	Andrew Lea	The example risk register is too small	As above, or try increasing the text size	<b>Agreed.</b> Minimum font size in figures to be no less than 6 pt	12
(23)		5.3.5 (Part 2)	SES Tas	Andrew Lea	As above	As above	<b>Agreed.</b> Minimum font size in figures to be no less than 6 pt	12
(24)		5.4.2 (Part 2)	SES Tas	Andrew Lea	As above	As above	<b>Agreed.</b> Minimum font size in figures to be no less than 6 pt	12

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(25)	9	1.2	SES SA	Allan McDougall	<p>“The prime focus of this document is on the production of measurable and <b><u>consistent outcomes.</u></b>”</p> <p>“Can be used by consultants, agencies, multi-agency groups – i.e. with <b><u>varying levels of technical ability and available time.</u></b>”</p> <p>There seems to be an inconsistency here. A rushed risk assessment with an input of low level technical ability will most likely produce a different result from an unhurried assessment carried out by a highly skilled team. This issue of varying levels of technical ability is also critical to the Risk Identification step (see below).</p>		<p><b>Ok.</b> The apparent inconsistency is noted. It is the project team’s view that the focus of this guideline is on consistent outputs rather than outcomes (which relies on implementation of risk treatment plans). However, the methodology as drafted does allow for consideration of different levels of confidence which stem from varying levels of time, expertise and data.</p>	13
(26)		2.1	SES SA	Allan McDougall	<p><b>Communicate and consult:</b> Communication and consultation with adversarial groups also need to occur from the outset because unless brought into the fold , such groups will never own the process or the result and will have their cynicism and suspicions reinforced, thereby aiding in sabotaging the effectiveness of at least some of the treatment strategies.</p>	<p>Adversarial groups need to be included in the communication and consultation process from the outset in order to minimise opportunities for ongoing unhelpful criticism of the assessment process.</p>	<p><b>Agreed.</b> Commentary is to be included noting the importance of considering adversarial groups during the development of the communication and consultation plan.</p>	14
(27)		2.1	SES SA	Allan McDougall	<p><b>Identify Risks:</b> In order to capture all the potential sources of risk and elements at risk a sufficiently comprehensive pool of expertise needs to be assembled. Should a less than comprehensive pool of expertise be used, then omission of potentially serious information about sources and elements may result, with serious consequences. Risk identification may be skewed by public feedback from letter-box drops in which “squeaky wheels” capture centre-stage.</p>		<p><b>Ok.</b> Guidance notes to reflect importance of gathering sufficient data and consulting with appropriate subject matter experts.</p>	15

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(28)		3.2.2	SES SA	Allan McDougall	<p>The paragraph “in general, facilitators must be mindful of the time allowed for the workshop and ensure that each of the three main elements of the process, i.e. identify, assess and evaluate, is given due consideration. This is important, as the desired amount of time is often not available due to resource constraints.”</p> <p>Having been to one of these workshops to address the earthquake risk to South Australia, I would have to say that the “establish the context” step was hardly give a mention and the identify, assess and evaluate steps were rushed as well. In addition, there was no audit check to verify that a comprehensive pool of expertise had been assembled. The whole risk assessment process requires expertise, and the employer of the person with that high level of expertise often frowns on them “wasting a whole day sitting around at a workshop when they’ve got a real job to do” In my experience risk assessments are often rushed and the outcomes are therefore questionable.</p>		<p><b>Agreed.</b> However, the guidelines do not mandate establishing the context in the workshop. Rather a series of stakeholder meetings and project team work is required per the guidelines pt2.</p> <p>Checklist to “audit” comprehensiveness of activities undertaken to be included in the context setting section.</p>	16
(29)		4.	SES SA	Allan McDougall	<p>Too often the context step is rushed (or ignored). It would seem some people fail appreciate how important it is to “establish the context” and regard it as peripheral to the whole process. When time is at a premium, “establishing the context” seems to be the step that is regarded as expendable.</p>	<p>Suggested inclusion: Any temptation to rush the “establishing the context” step should be resisted. The context is foundational to the risk assessment process and if this step is treated dismissively, ultimately outcomes of the process may include inappropriate treatment options and hostility from ignored stakeholders.</p>	<p><b>Agreed.</b> Paraphrased guidance to this effect will be included.</p>	17

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(30)		Part 2 - Figure 2	SES SA	Allan McDougall	The wording in the box at the top - "Kick-Off Meeting" alongside of which appears the term "establish the context", to me, has connotations of flippancy and sends a somewhat dismissive message about the significance of establishing the context.  It complicates the diagram, but I would suggest the vertical bars "Monitor and Review" and "Communicate and Consult" are important and should be included, (in black and white rather than colour)	Recommended that "Kick-Off meeting" be replaced by "Initial meeting"	<b>Agreed.</b>	18
(31)		Part 2- 5.1	SES SA	Allan McDougall	"Summary of context" In the earthquake hazard leader workshop I attended this was dealt with only briefly. I believe that for "earthquake" at State level, "establish the context" requires considerable rigour.		<b>Agreed.</b> Issue noted, however the context setting phase does not need to be undertaken in full in a workshop environment, however a clear summary of outputs from this process should be provided and discussed and where appropriate, facilitators should allow input from and contribution from workshop participants. Its agreed that it is very important to ensure participants have a common understanding of the context for the risk assessment they are undertaking.	19
(32)		Part 2 - Section 5, Table 1	SES SA	Allan McDougall	Control Table: One of the findings re the Longford Gas explosion was that workers at the site were competency trained with regard to operating separate modules (competent in operating modules A, B C and D) at the site but lacked a holistic understanding of how a malfunction in one would affect the others ( If A malfunctioned, how would that impact the functioning of B,C and D).	Suggest for Behavioural Controls, add (at Level 2) <ul style="list-style-type: none"> <li>Staff have holistic understanding of the impact of one control's failure on another.</li> </ul>	<b>Accept.</b>	20
(33)		Part 2, Page 24	SES SA	Allan McDougall	Illustrative Likelihood Assessment:  The rationale behind the following statement escapes me:  "Since scientific data indicates that this event <u>will</u> result in approximately 40 fatalities therefore the likelihood is equivalent to the "almost certain" level as defined in Table 4 - Likelihood Table. How do you deduce that?  To me, the whole example (inside the box) seems "woolly"	Re-work the example?	<b>Agreed.</b> The illustrative example on p24 in exposure draft 0.B is flawed and needs to be fixed. Additional guidance notes are to be provided on how factors such as: <ul style="list-style-type: none"> <li>likelihood of design event</li> <li>Spatial relationships for event and elements at risk,</li> <li>Adequacy of existing controls (ie likelihood of particular consequences),</li> <li>Time frame for assessment, and</li> <li>Lifetime of element at risk</li> </ul> are to be considered when analysing the likelihood of particular consequences occurring for identified elements at risk for the selected design event.  Generally these factors will reduce likelihood of particular consequences below the starting point of the likelihood of the design event.	9

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(34)	10	General	DEPHA TAS	David Taylor	It has been reviewed at this end all looks satisfactory.		Ok	NA
(35)	11	P3 Communicate & Consult	DTEI SA	Shane Turner	Last line, " Since the views....." think about writing something a little more inclusive about those with different perceptions of risk.		Ok.	21
(36)		P7 3.2 The Process	DTEI SA	Shane Turner	Consider putting more emphasis on the information required to be assembled <u>before</u> the workshop and examples of this information, eg for Flood – 1 in 20yr and 1 in 100 yr flood plain maps, maps showing locations of critical infrastructure, schools and aged care etc....be consistent with the example that flows through the document.		Ok. Will include separate checklist of potential information sources and data to be assembled prior to the workshop.  Agreed.	22  23
(37)		PART 2- Section 3, page 6	DTEI SA	Shane Turner	Key elements – Infrastructure – can the infrastructure element be expanded upon here or in the definition on p22 to list types of infrastructure?		Ok. Will include "lifelines / utilities" where appropriate on p6 and 22.	24
(38)		PART 2- Section 5.2, after the example	DTEI SA	Shane Turner	Consider changing wording to "In this way different senario's for the same hazard are assessed to provide a sensitivity analysis that may be useful in determining the most appropriate level of risk treatment"		Ok.	25
(39)		PART 2- Section 5.2 Illustrative Risk Statement	DTEI SA	Shane Turner	Statement seems very long, can it be simplified?  There is a switch from the East Coast Low example risk statement and bow tie example to an earthquake example in the risk register, should there be one continuous example used throughout?		Noted.	26
(40)		PART 2- Figure 3 & 4	DTEI SA	Shane Turner	Typing in figures is unreadable		Noted – will be amended.	12
(41)		PART 2- 5.2.2 Risk Register	DTEI SA	Shane Turner	Can the risk register example be expanded with a few more lines filled in?, there is plenty of room on the page. Is there going to be a more comprehensive example provided from the Pilot Workshops, say as a Part 3?		Agreed. Worked example to be provided	27
(42)		PART 2- 5.2.2 Risk Register	DTEI SA	Shane Turner	Is a risk numbering system going to be proposed rather than just 1,2,3?		Agreed. Options for a risk numbering system to be included in line with the EMA manual on ERM.	28

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(43)		PART 2-5.2.2 Risk Register	DTEI SA	Shane Turner	Is it proposed that the six impact areas as per the consequence table are separated in any way in the risk register, an expanded example could show how.		Mapping of risk statements into the risk register and approaches for organising the data is to be described in the commentary on use of the risk register	29
(44)		PART 2-5.2.2 Risk Register	DTEI SA	Shane Turner	Could risk statement be more specific..."Critical" infrastructure?		Example risk register is illustrative only. Level of detail will be dependent on scope and context.	NA
(45)		PART 2-Consequence table	DTEI SA	Shane Turner	I understand that there has been a thorough check with local governments to determine the "Economy" criteria of the table, has it also been checked at state level where NERAG will also be applied? Although the check has been made with local government are we happy with the result?, 3% unrecoverable financial loss for a financial year does not seem catastrophic to me. Can a check be made against actual emergency events?		The level of 3% unrecoverable financial loss for a financial year is considered an appropriate proxy for easy categorisation economic consequences for first pass risk assessments.	NA
(46)		PART 2-Consequence table	DTEI SA	Shane Turner	Has there been a check across the consequence table to ensure that there is relativity between people and economy.		Although in general impacts between the two are correlated, human and economic consequences not co-dependent. Project team is satisfied that the scales of impact are appropriate for classification of consequence.	NA
(47)		PART 2-Table 5	DTEI SA	Shane Turner	Risk register uses earthquake magnitude, illustrative example uses recurrence interval, should we be consistent?		<b>Agreed.</b> There are a number of ways that the chance of an event occurring can be expressed. Many terms are used at times interchangeably, including Annual Exceedance Probability (AEP), Return Period, Annual Recurrence Interval (ARI), probability, likelihood and frequency. Return period usually refers to the average time between events of a certain magnitude, while exceedance probability indicates the chance an event of a particular magnitude will occur in a certain period of time. The Project Team's position is that hazard risk be considered in terms of probability because of confusion over the use of the terms "average recurrence interval" (ARI) and "return period". The use of ARI and "return periods" has been criticised as leading to confusion in the minds of some decision makers and members of public. Although the terms are simple, they are sometimes misinterpreted as implying that the associated magnitude is only exceeded at regular intervals, and that they are referring to the elapsed time to the next exceedance. It is therefore preferable to express the rarity of an event (rainfall, for example) in terms of AEP. Using rainfall as an example, a total of 159mm falling in 3 hours at a specific location may have a 0.010 (i.e. 1%) probability of being equalled or exceeded in any one year. This can be easier to understand than the equivalent statement of a rainfall total of 159mm in 3 hours has an average recurrence interval of 100 years. With appropriate information, all hazards can be put into this context.	30

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(48)		PART 2- Hazard Controls	DTEI SA	Shane Turner	In our NERAG workshop the State Recovery Office representative was concerned at the lack of the mention of the recovery process in general in the document, can the recovery process be mentioned in this table or possibly elsewhere.		Recovery is explicitly considered as post event controls to minimise consequences. See p12, 14, 15 & 16 of Pt 2. However, it is <b>agreed</b> that the typical controls identified in table on p40 in the appendices are inadequate and that this table requires significant enhancements.	31
(49)		PART 2- Hazard Controls	DTEI SA	Shane Turner	The controls are fairly generic, consider expanding, eg. for Earthquake; PP - Seismic Assessments and Upgrading, Emergency Services Plans, Training & Exercises, Seismic monitoring, Earthquake impact modelling. RR - Rapid Damage Assessment, Temporary accommodation, Emergency grants, Community information. Since many controls are repeated in the table should there be a generic few controls mentioned at the top and then more specific ones listed under each heading.		<b>Agreed.</b>	31
(50)	12	Process 3.2	BOM VIC	Robin Hicks	Suggest renaming section 3.2 to "Workshops"	Remove 3.2.1 and 3.2.2 and instead reference the guidance material for details on preparation for workshops.	The project team's view is that "the process" is more than simply the workshop phases, rather "the process" entails those activities identified in pt 2 of the guideline. Duplication of material between two parts is however noted. The content of pt 2 and pt 1 will be combined back into a single document which should avoid duplication.	32
(51)		Process 5.1	BOM VIC	Robin Hicks		Provide reference to Guidance Material for description of bow tie diagram.	<b>Agreed</b>	33
(52)		Process 5.3	BOM VIC	Robin Hicks	Suggest providing reference to and description of the ALARP Principle e.g. reference at right	<a href="http://education.qld.gov.au/riskmanagement/pdf/rm-6.pdf">education.qld.gov.au/riskmanagement/pdf/rm-6.pdf</a>	The term ALARP arises from UK legislation, particularly the Health and Safety at Work Act 1974, which requires "Provision and maintenance of plant and systems of work that are, so far as is reasonably practicable, safe and without risks to health".  Details on ALARP are also found in HB436. Appropriate referencing to be included.	34

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(53)		Guidance Section 3	BOM VIC	Robin Hicks	Para on Climate Change should also emphasise the uncertainty of the magnitude of climate change, particularly over longer time intervals	Add new para: Estimation of the magnitude of climate change introduces an extra element of uncertainty, particularly over longer time periods. Estimations of the likelihood of weather related events should be based on available climate records together with estimates of changes in likelihood due to future climate change.	Ok.	35
(54)		Guidance Section 3	BOM VIC	Robin Hicks	In Risk criteria to the Establish the Context Reporting template, expand the possible causes	Add "non-intentional human origin" to possible causes.	Ok	36
(55)		Guidance Figures 3 and 4	BOM VIC	Robin Hicks	These diagrams need to be re-drafted to ensure text is legible. (Compression of text width results in current text not being readable even at 200% enlargement in pdf.		Agreed	12
(56)		Guidance Appendix	BOM VIC	Robin Hicks	Table on Typical Controls per Hazard Category	Add "Fuels management" as an extra Preventative / Preparedness Control	Agreed	37
(57)	13	General	LCC TAS	Rod Sweetnam	The language in the document is often not Plain English.		Agreed. Technical editorial work to be undertaken to enhance accessibility of the content by ensuring plain English is used throughout the guideline	38
(58)		General	LCC TAS	Rod Sweetnam	The language in the document is often prescriptive – mandatory statements are made where not appropriate.	These could be edited out.	Flexibility of approaches is implicit in the very nature of a "Guideline". However, it is <b>agreed</b> that an editorial check is required to limit the use of prescriptive statements.	39
(59)		General	LCC TAS	Rod Sweetnam	The current two part structure means there is duplication between the documents and a lack of clarity. Both documents seem to address issues of methodology and theory resulting in confusion for the reader.	The documents should be combined with 2 sections – theory and methodology.	Agree that the two documents should be combined.	32
(60)		General	LCC TAS	Rod Sweetnam	The document is silent on how responsibility for mitigation actions will be assigned. I believe there is an assumption all identified risks and mitigation activities will be the responsibility of the entity that identified the risk. This may not be the case in practice.	Highlight in the document assignment of responsibility for mitigation actions via consultation as a discrete and important task.	Agreed. Details on preparing a risk treatment plan are to be included. This will include details of the essential information or data that the Treatment Plan must contain. eg who or what organization is responsible for the required action; The Time Frame in which it should be undertaken; Who is responsible for monitoring and when and how often. It will also include guidance on assigning responsibility for mitigation actions via consultation as a discrete and important task	8

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(61)		Part 1 – 5.1 pg 12	LCC TAS	Rod Sweetnam	The bow-tie diagram has been noted as the preferred tool for identifying risks in the NERAG context – this is too prescriptive. There are other models of risk identification that will provide the desired outcome.		The project team's view is that the bowtie should be promoted in the guidelines as a useful tool, while noting that there are additional approaches including checklists, flowcharts, team-based brainstorming, systems analysis, "what if" and scenario analysis etc. Alternative data capture approaches are also available including textual summary records.	40
(62)		Part 2 5.2.1 pg 11	LCC TAS	Rod Sweetnam	The focus on the detail of the bow tie diagram means that other tools for identifying risks that are equally as effective are not noted.	Note that other tools are available for identifying risks. Provide detail on another tool so that there is a choice and comparison of techniques.	<b>Ok.</b>	40
(63)		Part 2 5.2.1 pg 14 & 15	LCC TAS	Rod Sweetnam	The detail of the bow-tie diagram can not be read easily due to the font size of the text.	Increase font size	<b>Agreed.</b>	12
(64)		Part 2 5.3.3 pg 23 Table 4	LCC TAS	Rod Sweetnam	The Likelihood table notes frequency and average recurrence intervals which relate to a huge span of time. i.e unlikely is once per 1 000 years	Scale the frequency and average recurrence interval down so we are dealing with shorter times spans. This will assist users as we will be talking about foreseeable time scales e.g unlikely once per 250 years. As the results are meant to be subject to regular review this will make the data more relevant to users and the assessment more tangible.	<b>Reject.</b> The project team considers emergency risk management requires consideration of high consequence low likelihood events.	NA
(65)	14	Part 1: 3.2	Justice VIC	Paul Gabriel	Discussion of 'A workshop...'. It is unclear whether there is a difference between workshops for base line assessment and for detailed analyses. Can a comprehensive base line analysis be conducted in one workshop? (Obviously each detailed analysis needs its own workshop).	There is some discussion on page 9 – suggest further consideration. For example – a single workshop for base line analysis may use an abbreviated process as the full process across a wide range of risks would be too onerous and time consuming for participants.	<b>Agreed.</b> The distinction needs to be clarified. It is the project team's view that the guidelines should not be prescriptive, rather that the context and scope will guide the extent of workshoping required for a particular study. This needs to be reflected in the guidance notes. The level of workshoping undertaken will inevitably impact on the confidence level and hence will be implicitly considered during the risk analysis phase.	41
(66)	14	5.1	Justice VIC	Paul Gabriel	The preparation of a bowtie diagram before the workshop is supported. However, the model shown has to carry a lot of information. This makes it hard to contain and read on a single page.	I suggest splitting the elements of the bowtie into two diagrams. The links between sources, causes and incidents can be removed and shown in a separate table (see example appended). This then makes the bowtie diagram somewhat simpler and easier to handle.	<b>Reject.</b> The desired outcome of the last set of drafting instructions was that the bowtie would be used as a conceptual tool only (rather than a data capture tool). This should alleviate the problem of capturing all the information on the bowtie diagram. An alternative template for data capture and is to be provided.	42
(67)	14	5.3.2	Justice VIC	Paul Gabriel	On p. 16 under the heading of Risk rating, the term 'core business' would be better expressed as 'routine' business – for the emergency management sector.	<b>Accept.</b>		43

Row	Submission	Section	Agency	Name	Comment	Suggested amendment	Project Team Response	Drafting reference #
(68)	14		Justice VIC	Paul Gabriel	Under the heading 'Identified Control Implementation or Improvement Opportunity', I would have thought that this activity is not part of risk evaluation, but instead is part of risk treatment, ie the next section.		<p><b>Reject.</b> This process is a discrete step in the risk evaluation phase to determine whether risks are as low as reasonably practicable (ALARP). If risks are rated high or medium then the "Identified Control Implementation or Improvement Opportunity" test is applied and if the risk rating is reduced then clearly these risks are not ALARP and move through to the risk treatment phase of the process. If however the test shows these risks to be ALARP then they are treated as tolerable subject to being ALARP and ongoing monitoring and review.</p> <p><b>However,</b> it is the project team's view that the purpose for this process/activity needs to be better articulated and described as a discrete step during the evaluation phase.</p>	44
(69)	14	6	Justice VIC	Paul Gabriel	Risk Treatment is not usually considered to be part of risk assessment. These are risk assessment guidelines. The ISO 31000 will refer to risk <i>modification</i> rather than risk <i>treatment</i> .	I do not object to the inclusion of this material. It might be worth considering changing the title of the document to Risk Management Guidelines.	<p><b>Reject.</b> The project team agrees with your sentiment, however there was significant criticism from stakeholders during the first round of consultation when risk treatment was largely excluded from the materials, and hence its discrete inclusion. However, to move to a full risk management guideline risks scope creep and thus the title change is not supported.</p>	NA
(70)	14	<u>Part 2.</u> 3	Justice VIC	Paul Gabriel	The examples given for objective and scope could give a misleading impression. The context is not of a corporate entity such as a council, but about the needs of the community, from an all-agencies perspective, whether at municipal, regional, state or other administrative level.	A better phrasing might be, 'Conduct an assessment of the bushfire risk to the community, in order to assess which risk treatments should be emphasised'.	<p><b>Accept.</b></p>	45
(71)	14	3	Justice VIC	Paul Gabriel	Climate change	In addition to modifying existing hazards, climate change may also lead to impacts and consequences not previously experienced in particular areas.	<p><b>Accept.</b> Last paragraph to be modified.</p>	46

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(72)	14	5.2	Justice VIC	Paul Gabriel	I have difficulty with the number of risk statements proposed – using ‘all credible’ risk scenarios. Not only would this enlarge the workload significantly, I think it’s more complex than necessary.	Would it not be as good, and simpler, to have a risk statement that said, ‘there is a risk that floods in this area will cause a range of adverse consequences’ The range of consequences is covered in the consequence assessment, and the use of a risk curve can show a range of combinations of consequence and likelihood.	<p>Its <b>noted</b> that this approach could work and would reduce the documentation requirements during risk identification, however, once the range of credible consequences for a given risk scenario is determined (during risk analysis), there will still need to be separate line entries within the risk register for each credible consequence.</p> <p>It is <b>agreed</b> that too many risk statements become unwieldily so further details are required in the guidance notes on context setting to ensure that the <b>scope</b> is adequately considered and that parameters for the study are defined. Explicit consideration is need to agree on (1) which classes of impacts will be considered, (2) the hazards or events to be considered and (3) the design events or scenarios to be considered for each hazard or scenario.</p> <p>For example a study may simply be concerned with considering people and economic impacts and hence will exclude other impact categories. Similarly, during the scoping stage the project team may simply wish to consider flood events. They may then want to consider the range of design events (or scenarios) to be considered eg 1% (1:100), 0.5% (1:200) and 0.1% (1:1000) AEP design events form the basis of three scenarios to develop risk statements for. Where multiple hazards and design events are to be considered in an ERM then cautionary advice needs to be provided on the time and resources available to complete the work.</p> <p>Consideration of likelihood for a range of credible levels of consequence will then be undertaken during the risk analysis phase for each risk statement. In this sense a risk curve is sampled across the range of credible levels of consequence for a range of credible risk design events.</p>	47
(73)	14	5.2.1	Justice VIC	Paul Gabriel	The bowtie diagram is a useful way to summarise a lot of information, however, I would suggest simplifying the left side to limit to one hazard only.	For the Victorian risk assessment methodology, we are considering a bowtie diagram that is a little different (attached). I think it better fits within the emergency management context.	<b>Reject.</b> As the bowtie will be used as a conceptual tool, consideration of the interaction of multiple hazards during an emergency is supported in-line with the “all-hazards” approach.	NA
(74)	14	5.2.1	Justice VIC	Paul Gabriel	Response and recovery should not be classed as ‘controls’, as they do not reduce the risk at the date of the risk assessment. They deal with the impact, when the risk is <i>realised</i> . Also, it’s probably too hard to quantify their impact on risk for assessment purposes, even though they do operate to reduce consequences.	Response and recovery should be identified as ‘activities’, not ‘controls’.	<p><b>Reject.</b> Use of the term <i>control</i> is consistent with the definition within AS/NZS 4360. “...an existing, process, policy, device, practice or other action that acts to minimize negative risk or enhance positive outcomes.”</p> <p>Also, it is not accepted that risk from emergencies is realised at a single point in time. Response and recovery activities, programmes and arrangements reduce consequences (albeit post-event) and should therefore be considered as controls that influence the likelihood of particular consequences.</p>	NA

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(75)	14	5.2.2	Justice VIC	Paul Gabriel	Following my comments on 5.2 above, the risk statement example in the risk register concerns me. If the risk assessment is carried out on an earthquake of x magnitude, then risk statements would have to be developed and assessed for all other magnitudes. In the example, the controls would also have to be assessed for adequacy against the specific magnitude of each earthquake. This is a very complex task and, I think, out of scope for a simple baseline process.	My understanding of risk assessment would suggest we assess the annual risk of the consequences of earthquakes of a variety of magnitudes (and show the results on a risk curve) and call it earthquake risk. This is not only more efficient, it is more easily understood and explained, and more suitable for a baseline risk assessment.	<p><b>Reject.</b> An earthquake of any given magnitude may produce a range of consequences – some more likely than others. Taking the design event / scenario based approach the NERAG encourages users to assess the likelihoods of a range of credible consequences for each design event / scenario. The approach you are advocating assumes a given consequence level for any design event.</p> <p>There has been consistent support for adopting the scenario based approach for emergency risk assessments which implicitly requires consideration of the likelihood of particular consequences arising from a particular scenario.</p> <p>It is agreed that risk should be sampled for hazards across a range of consequences and for a range of scenarios and that such activity can generate risk curves.</p> <p>For baseline risk assessments, sampling risk from two or three scenarios/design events may be sufficient to make decisions on immediate risk treatment, the need for detailed analysis and/or the adequacy of existing controls for the risks.</p>	NA
(76)	14	5.2.2	Justice VIC	Paul Gabriel	Also, the residual risk, (lower than the 'initial' risk rating) is different only in the likelihood rating, whereas building controls etc should modify the severity and may not change the likelihood. It's also unclear why there would be a separate ratings for risk and residual risk for each type of control applied. This leads to too many results.	<p>The thinking would be easier to understand if the consequence rating were amended rather than the likelihood, (where the controls specifically address consequence issues, as with an earthquake).</p> <p>In my view, we are assessing today's risk. This is already the residual risk as there are controls in place for most risks likely to be assessed.</p>	<p><b>Reject.</b> The implementation of building controls does not impact on potential consequences, rather they impact on the likelihood of those consequences eventuating.</p>	NA
(77)	14	Table 3	Justice VIC	Paul Gabriel	Consequence Table. The levels do not step up evenly across the categories. For example, the morbidity figures step up by a factor of ten from moderate to major and from major to catastrophic, but the figures for economy do not.	Steps in the Victorian table (appended) are intended to be 10x across the categories.	<p><b>Noted.</b> The inconsistency is noted, however, the project team is not convinced that different levels of impact across the classes of consequence need to change consistently (eg environmental consequences may have threshold impacts which are non-linear).</p>	NA
(78)	14	Table 4	Justice VIC	Paul Gabriel	Likelihood Table. The use of the word 'possible' as a likelihood level is inappropriate, because 'possible' is not modifiable. In other words, an event is either possible or not, and cannot be used in any sense that means 'somewhat' or 'very' possible, as has been done here. Strictly speaking, the word 'possible' can be used at every level of likelihood.	Another word should be chosen that can be modified to fit into a scale, or redraft the scale to use modifications of the concept of <i>likely</i> .	<p><b>Reject.</b> Agree with the sentiment of the argument, however there has been strong support for existing terminology in the likelihood table which is consistent with the examples provided in HB436.</p>	NA

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(79)	14	5.4.1	Justice VIC	Paul Gabriel	In the discussion of broadly acceptable risks, the suggestion that they might require little action is unhelpful, as such risks may simply be very real and well controlled by existing measures that are assumed to continue.	The sentences should read 'no <b>further</b> action...', or no <b>further</b> risk treatment measures... (in the line over the graphic).	<b>Agreed.</b> Its also noted that such risks are subject to ongoing monitoring and review.	130
(80)	14	5.4.3	Justice VIC	Paul Gabriel	Three risk rating matrices are noted; there is no explanatory text.		<b>Noted.</b> This will be addressed by combining the two parts of the guidelines into one single text with guidance notes and practical tools brought together.	131
(81)	14	7	Justice VIC	Paul Gabriel	This section is out of scope for the project.		<b>Noted.</b> Agree that risk treatment is out of scope, however there was significant criticism from stakeholders during the first round of national consultation such that its inclusion was considered a key requirement to gain stakeholder acceptance.	NA
(82)	14	Appendix	Justice VIC	Paul Gabriel	Table of typical controls. Needs redrafting with experts, or be omitted. See comment above re response/recovery as 'activities', not 'controls'.		<b>Agree -</b> that significant improvements are required	31
(83)	15		Scarabworks	Jeff Austin	Exposure Draft 0.B much improved.  The focus is now clearly on a National perspective (i.e. less open to interpretation – e.g. what may be regarded as 'catastrophic' in a small local community may not be so regarded nationally?)		It is not intended that the guidelines focus solely on national-level risk assessments. Rather the guidelines make it clear that the method is appropriate for assessment of emergency risk at all levels. The consequence descriptors are crafted in such a way as to ensure relativity irrespective of the specific community utilising the guidelines. Testing of the validity is undertaken by "translating" the consequence descriptors for the community under consideration.	NA
(84)	15		Scarabworks	Jeff Austin	Having recognized the National perspective, the only remaining suggestion I have is for the 'Standard' to establish consistent levels for 'Likelihood' covering each Local Government Area.	A Likelihood Map for each Natural Disaster. Such a tool within the Standard (or an Annexure) would eliminate a lot of the guesswork by LEMCs and provide consistency across Australia.	<b>Reject.</b> Individual communities are best placed to determine the design events for particular hazards that they will consider for their area and it is beyond the scope of this project to map hazard across Australia.  That said, the assessment of likelihood of particular consequences arising from a given scenario or design event will be standardised per adoption of the likelihood criteria in table 4 of part two. Firmer guidance on how likelihood is determined when considering design event, spatial distribution of hazard and elements at risk, adequacy of controls, timeframes for assessment and the lifetime of the element at risk will need to be provided to ensure consistent approaches are taken.	48

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(85)	15		Scarabworks	Jeff Austin	At the local level, away from Regional Centres (these LEMCs are usually attended by senior Agency reps who are also at District level but often don't contribute directly to outlying LEMCs), it is virtually impossible to get appropriate expert technical advice on a one-on-one LG basis (certainly applies across NSW). The resources are just not available to assist each LGA.		Issue noted but is considered beyond the scope of this project. That said, the confidence assessment is a useful tool to ensure that risk study outputs tempered by the quality of data and level of experience in the project team and workshop participants.	NA
(86)	15		Scarabworks	Jeff Austin	However, for Natural Disasters especially, likelihood can be rated across the nation (eg The Earthquake map by GA could be overlain with LG boundaries and scaled accordingly (eg how more likely are earthquakes from the Hunter- Mooki fault that cuts Newcastle, through Moree, compared to those from the Lachlan fold underlying Dubbo?). LEMCs may wish to further consider seasonal influences (Wildfire springs to mind) but if the evaluation is to cover say a 5 year period, the consistent Likelihood Maps are still relevant.		Access to quality data on hazard distribution will undoubtedly contribute to the confidence with which risk assessments can be undertaken at the local level, however this task is beyond the scope of the project to develop the guidelines.	NA
(87)	16	Context	NSW SEMC	Amber Escott	ERM context typically includes describing the local community / community vulnerability, the documents have limited coverage in this area.	Include more detail on how to describe community and community vulnerability within the context section.	<b>Agreed.</b> During the context setting phase and the risk identification phase vulnerable elements at risk should be identified and consideration given to assessing risk specific to those vulnerable elements.	49
(88)		Part 1 p10 Part 2 p5	NSW SEMC	Amber Escott	The example of an objective and scope in the context (pt2, p5) are hazard (bushfire) specific, this differs from the purpose referred to in the rest of the document for all sudden-onset emergencies (pt1,p10).	Ensure examples are consistent with ERM purpose and target audience.	<b>Reject.</b> The example is an illustrative example only. The number of hazards to be considered will be determined during the context setting phase when scope is agreed. That said, it is <b>agreed</b> a range of examples should be included to demonstrate application of the methodologies and tools across the different hazards.	50
(89)		Detailed bow tie diagram Risk register	NSW SEMC	Amber Escott	The detailed diagrams and tables are difficult to read. Also, whilst one example of a risk statement is given, it would be of great benefit to see additional examples in the content of the diagrams / table so that the user can see how the information interacts within the risk register / bow-tie diagram.	More user friendly formats. Include examples within the content of the bow-tie / risk register.	<b>Agreed.</b> <b>Agree</b> that more examples are required, however it is now intended that the bowtie not be utilised as a data capture instrument, rather as a conceptual tool to assist in the identification of sources of risk, controls and impacts.	12

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(90)		Control table	NSW SEMC	Amber Escott	Source table. This table is commonly used by organisations as an internal management tool. Whilst it is suitable for enterprise/business risk management, it doesn't match with the rest of the document being emergency risk management.	If the control table is to be used for emergency risk management then it will need to be adapted for more community / hazard purposes e.g. community resilience / PPRR controls.	<b>Reject.</b> The control classification table when coupled with the bowtie approach is considered entirely consistent with emergency risk management which implicitly has a community and hazard focus. Indeed, during risk identification controls are initially considered pre and post emergency across PPRR. The control table is simply an approach to support consideration of adequacy of controls. Most other mythologies use a similar approach (eg the Victorian model for assessing risk at the state level uses a similar but more complex approach which has six classifications for controls (physical, monitoring, strategy/planning, training/testing, work practices/compliance, and information/analysis) as opposed to the three identified in the NERAG (behavioural, procedural and physical). The Victorian model also takes a more complex matrix approach to determining the level of adequacy of control( which involves an assessment of reliance (on a scale of 1-6) and effectiveness (on a scale of 1-3)).	NA
(91)		Risk statement vs risk scenario	NSW SEMC	Amber Escott	Having risk scenarios that build from the risk statements are a good idea, however it is not explained to the reader how to do this. It would be good to include risk statements and risk scenarios in the glossary and to use an example that builds throughout the document.	Include definition of risk statements and risk scenarios in the glossary. Consistent examples.	<b>Agreed.</b> Definitions of risk statements and risk scenarios are to be included in the glossary. <b>However</b> , the guidelines will promote the use of risk scenarios / events as the basis upon which risk statements are generated rather than the other way around.	51
(92)	17	General	NSW SEMC	Neil Hargreaves	The documents appear to include a number of useful concepts from a range of sources, however, the document fails to pull these concepts together in any meaningful way.	Consideration should be given to further contextualising the document to the emergency management arena	<b>Reject.</b> Although the introduction(s) need significant work, the project team is satisfied that the guidelines are highly contextualised for the emergency management sector.	NA
(93)			NSW SEMC	Neil Hargreaves	The documents requires further contextualisation and would benefit from a worked example which could be carried through from Context to Treatment.	The inclusion of a worked example through the document would assist the non-risk managers using the guide.	<b>Agreed.</b> Worked example needs to be provided through all phases of the process.	23
(94)			NSW SEMC	Neil Hargreaves	The guidelines claim to be suitable for a wide range of users. At a local level, Emergency Management Committees have struggled with the apparent complexities of the ERM process for those with limited risk assessment experience.	In order to assist the emergency risk assessment process at the local level, consideration should be given to ensuring that the document is written in plain English, that key principles are highlighted (perhaps through the use of breakout boxes), and that processes are pictorially represented and supported by examples.	<b>Agreed.</b> However, the project team's position is that the guidelines are not intended for wider audiences. Rather they are intended for ERM project team members, leaders and facilitators rather than all ERM workshop participants.	38

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(95)		General	NSW SEMC	Neil Hargreaves	Considering the document from the local perspective, the document appears “wordy”, “scientific” and perhaps unwieldy.		<b>Agreed.</b>	26, 38
(96)		General	NSW SEMC	Neil Hargreaves	A number of the tables and diagrams appear to have been reproduced or adapted from other sources without acknowledgement.	The authors should ensure that appropriate references and citations are provided.	<b>Reject.</b> Appropriate referencing and citations are provided throughout. However, the project team agrees that this should be a key check prior to publication.	52
(97)		Guidelines 1.2	NSW SEMC	Neil Hargreaves	The section on scope again appears to focus on natural hazards with an apparent “tack-on” comment related to human and animal disease.	The EM world has long since adopted the all-hazards approach. Notwithstanding the fact that the catalyst for these guidelines was the COAG <i>Natural Disasters</i> report, the NERAG needs to be explicit in promoting the accepted practice of all-hazards.	The introduction is unsatisfactory in its current form and significant redrafting is required. This process will ensure that the applicability of the method to a range of hazards is emphasised, however the project team is of the view that there must be transparency in detailing the genesis of the guidelines (being sudden onset natural hazards) – this justifies the adoption of the scenario based approach.	NA
(98)		Guidelines 5.1	NSW SEMC	Neil Hargreaves	p13,para6 The guidelines purport to support the use of straightforward or advanced risk assessment techniques. Naturally, whether a technique is straightforward or advanced is a subjective assessment. However, para6 appears to compel assessment teams to utilising the bowtie diagram process, which, when considered at a local level, may appear to be an advanced technique compared to the current prevalent assessment technique of “do we get [insert hazard] in our area?”.	This is not denigrating the bowtie diagram as a tool. [It has served the process engineering industry well for many years], however, NRAAG members should consider if it the intention of these guidelines to compel emergency committees at a local level to use this tool. It may be appropriate to provide a suite of tools to assist in the risk assessment process. [ref: Standards Australia HB436:2004]. Whatever tools are provided to assist in the process, these need to be backed up with worked examples and, in due course, training materials, particularly for the local level.	Whilst the guidelines will promote the use of the bowtie diagram as the tool of choice for considering risk scenarios, it is agreed that other tools need to be mentioned.  In the next draft commentary on risk identification process is to note that the bowtie is a useful tool (and preferred), while accepting that there are additional approaches including checklists, flowcharts, team-based brainstorming, systems analysis, “what if” and scenario analysis etc. Additionally an alternative data capture / record template for risk identification outputs is to be provided.	40
(99)		Notes 5.3.2	NSW SEMC	Neil Hargreaves	Table 1 bears no relevance to emergency management in its current form.	Table 1 and this section needs to be contextualised to the emergency management world.	<b>Reject.</b> See response to comment no. 80 above.	NA
(100)		Guidelines & Notes	NSW SEMC	Neil Hargreaves	Identification of Risks Neither the Guidelines nor the Notes provide any guidance on identifying elements at risk. ERM Studies continually struggle with describing communities and, in particular, identifying at-risk (vulnerable) communities.	Consideration should be given to including a section on the CRITICAL stage of assessing “community” and identifying elements-at-risk.	<b>Agreed.</b> Broad categories of elements at risk will be determined during the context setting phase and particularly when defining the scope of a particular study. Elements at risk are confirmed during risk identification phase and vulnerable elements at risk are considered for inclusion as specific risks within the ERM study. It is noted that community education and awareness are control measure categories suggested in Appendix A to Pt 2.	53

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(101)		Guidelines 4.0	NSW SEMC	Neil Hargreaves	The set of standardised risk criteria suggested at p10 is not provided.		<b>Reject.</b> Standardised risk criteria are provided in pt 2, specifically: they are set in the consequence table, the likelihood table (and its accompanying notes), the risk matrix and the tolerability matrices.	NA
(102)		Guidelines & Notes	NSW SEMC	Neil Hargreaves	No guidance is provided on Communication & Consultation.	"The Workshop" is not consultation.	The guidelines do not suggest that the workshop provides the vehicle for communication and consultation.  In addition, the project team notes that commentary on the importance of communication and consultation is in-fact provided on p3. It is noted that content is limited, however, the scope of this project is to provide a national emergency <u>risk assessment</u> guideline not a <u>risk management</u> manual.	NA
(103)		Guidelines & Notes	NSW SEMC	Neil Hargreaves	Similarly, no guidance is provided on Monitor & Review.		Again, limited commentary on this aspect of risk management is provided on p5, however detailed description of options available to communities and organisations to monitor and review are out of scope for these guidelines.	NA
(104)	18	Part 2 Fig 3 Bow tie Diagram p14	NSW RFS	Simon Heemstra	Are community education and awareness and community resilience considered control measures (it appears the community resilience is not a RR control measure looking at the diagram)? How are they considered in risk analysis?	Clarify how you include community resilience in risk analysis? Provide an example of where it would be used.	<b>Accept.</b> Resilience and vulnerability are individual and combined characteristics of the elements at risk and therefore need to be considered during the risk identification and risk analysis phases. Guidance notes are to be provided to direct thinking towards vulnerability and resilience during the risk identification phase and are to provide guidance on how these factors can be captured and considered in the risk analysis phase.	54
(105)		Part 2 Fig. 4 Detailed bow tie diagram p15	NSW RFS	Simon Heemstra	The detailed bow tie diagram does not add any value to the guidelines as it does not provide any additional information apart from showing empty boxes. It would be helpful if some of the boxes were completed to show the type of information to be considered.	Add more information into some of the boxes in the detailed bow tie diagram.	Concern noted and it is agreed that the diagram is not useful in its current format. In the next draft the focus will be on its use as a tool for conceptualising the sources, causes, controls and impacts from an emergency event, however the guidelines are to provide an alternative template for capturing and displaying risk identification data.	42
(106)		Part 2 5.2.2 Risk register p16	NSW RFS	Simon Heemstra	Why is consequence labelled as severity in the risk register?	Change table heading to consequence	<b>Agreed</b>	55.
(107)		Part 2 5.2.2 Risk register p16	NSW RFS	Simon Heemstra	In the example why would infrastructure damage (referred to on p17 as loss of power, water and gas) result in building collapse?	Change infrastructure to structural damage to buildings.	<b>Reject.</b> The details provided on page 17 are an illustrative example only. Infrastructure impacts may include a range of specific consequences including loss of lifelines and utilities, structural collapse etc. The project team is satisfied that "infrastructure" is the appropriate classification of these types of impacts/consequences. <b>However</b> , the lack of consistency of examples is noted and will be addressed.	56

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(108)		Part 2 5.3.2 Control adequacy p18	NSW RFS	Simon Heemstra	Are control adequacies assessed for both PP and RR controls? If so, then the risk register should be changed to reflect which control adequacy refers to which type of control.	Clarify which controls are being assessed for adequacy and, if required, alter risk register.	<p><b>Agreed.</b> You are correct in that controls are identified before and after an emergency event across PPRR, and as currently drafted the method provides an adequacy assessment for given risk statements.</p> <p>It is accepted that the application of this process with respect to the example provided in the risk register on p 16 is somewhat confusing in that the separate control adequacy ratings are not implicitly linked to the “control opportunities assessment” and consequential evaluation of risks as to whether they are ALARP. This is to be fixed and appropriate direction provided in the guidance notes.</p> <p>It is the project team’s position that the adequacy assessment for existing controls needs to be amended. It is our position that the level of control is independent of the consequence level that is being assessed. Adequacy of controls will however vary with the design event or the scenarios selected (independent of assessed consequence levels). A simpler approach needs to be included in the method.</p>	57
(109)		Part 2 5.3.3 Likelihood p23	NSW RFS	Simon Heemstra	Likelihood rating should not refer to the likelihood of the consequence occurring.	Likelihood be defined as the likelihood of the event occurring.	<p><b>Reject.</b> Per 4360, the likelihood is an assessment of particular consequences occurring. In the NERAG this assessment is to take account of the design event (ie likelihood of event occurring), the spatial distribution of elements at risk and hazard, the adequacy of existing controls and, where appropriate, the time horizon for the study and the life span of the elements at risk under consideration.</p>	NA
(110)		Part 2 5.3.3 p24 spatial information	NSW RFS	Simon Heemstra	Last sentence in blue italic is incomplete. Relevant information may ?????		<p><b>Ok.</b> Layout and design issues noted and to be fixed.</p>	58
(111)		Part 2 p25 Table 5 Risk rating	NSW RFS	Simon Heemstra	Why is there a medium risk for an insignificant consequence? According to the consequence definitions this generally means there is no impact as a result of the event occurring. How can this be the same level of risk as an event where damage does occur?	Change medium to low	<p><b>Reject.</b> Assessing such risks as medium ensures that tolerability is only accepted when the ALARP principle is met.</p>	NA
(112)		Part 2 5.3.4 Confidence p28	NSW RFS	Simon Heemstra	If the confidence rating is to be assessed during the risk analysis stage, then the risk register should be changed so that the confidence is completed prior to the risk evaluation stage.	Shift the confidence column to the column before risk reduction measures.	<p><b>Agreed.</b></p>	59

Row	Submission	Section	Agency	Name	Comment	Suggested amendment	Project Team Response	Drafting reference #
(113)		Part 2 5.4.1. p30 consequence	NSW RFS	Simon Heemstra	Never changing the consequence rating highlights the difficulties in using these definitions of consequence and likelihood. The risk being assessed in the example is that of a building collapse occurring. How can the consequence still be catastrophic when the proposed control measure is ensure buildings can withstand an earthquake or to remove all buildings from the area? It defies logic to have a catastrophic consequence for building collapse if all buildings survive undamaged or there are no buildings there.	Try explaining this to the general public.	<b>Reject.</b> During the risk analysis phase the range of credible consequences are assessed for likelihood for a given scenario or design event. If catastrophic consequences are not credible from a particular scenario then they need not be analysed for likelihood and resulting risk ratings. Even if they analysed then is suggested that a very low likelihood rating will be attributed anyway – hence reducing risk ratings anyway.	NA
(114)		Part 2 5.4.1 p30 control opportunities	NSW RFS	Simon Heemstra	How do you reassess the likelihood after implementing a control opportunity? e.g. How can you decide what the frequency of an earthquake is and its associated consequences after you have implemented a control measure that reduced its consequence? It makes little sense to suggest that by implementing building regulations you can reduce the likelihood of a 1:500 year earthquake to the equivalent of 1:100,000 years. What data can you use to support this?	Likelihood should remain as the frequency of the event. The consequence is the impact of the event occurring. Therefore it is possible to reduce the consequence by implementing suitable control measures.	<b>Reject.</b> Per 4360, the risk analysis phase includes an assessment of the likelihood of particular consequences occurring from a given event/scenario. For the purpose of risk assessment, implementation of control opportunities is a simple test to see whether the likelihood of particular consequences occurring from a given event are reduced (ie is the risk ALARP?). Whilst we agree that implementing control measures may reduce consequences from particular emergencies, this is not relevant for the purpose of risk assessments. What is important is that the relative likelihood of particular consequences occurring has been altered through adoption of control opportunities.	NA
(115)		Part 2 Appendix p40	NSW RFS	Simon Heemstra	Control measures for bush fires can also include: Hazard reduction activities (creating fuel breaks, prescribed burning programs); Ignition management strategies (where arson is an issue); Preparedness e.g. fire trails	Include additional controls for bush fires.	<b>Agreed.</b>	60
(116)	19		NSW Dept Water and Energy	Russell Wade	The Guidelines are based on AS/NZS 4360:2004. It is understood from EMA that a draft standard is in circulation to replace AS/NZS 4360:2004.	Paragraph 3: suggest amend to read “...and form a companion to the Australian Standard for risk management (currently AS/NZS 4360:2004 <i>Risk Management</i> ), which is .....	<b>Ok</b>	61

Row	Submission	Section	Agency	Name	Comment	Suggested amendment	Project Team Response	Drafting reference #
(117)			NSW Dept Water and Energy	Russell Wade	It is noted that the scope has been broadened to enable the NERAG to be used for other than sudden onset natural hazards, and “the NERAG forms a sub set to the National Risk Assessment Framework”. If NERAG is a subset, then what is the full set of documents which comprise the National Risk Assessment Framework?	NERAG needs to be set in context. If NERAG is to be used for an “all hazards” approach in a local government context, then some indication needs to be made of the other categories of risk – eg. technological, infrastructure failure, specific hazard site, specific event and transport failure.	<b>Agreed.</b> Rewrite of introduction is planned.	10
(118)			NSW Dept Water and Energy	Russell Wade	The term “jurisdictional emergency committee” infers a State level committee.	Suggest amend to read “emergency management committees at State, District or Local level” or “emergency committees at all levels of government”.	<b>Ok</b>	62
(119)			NSW Dept Water and Energy	Russell Wade	The “bow tie diagram” is not cross referenced.	Suggest cross reference to 5.2.1 on page 11 of the Guidance Notes.	<b>Ok</b>	63
(120)			NSW Dept Water and Energy	Russell Wade	The font size is about 0.5mm and too small to be legible, even when enlarged.	Revert to original schematic view of bow-tie diagram, without specific detail.	<b>Agreed.</b>	12
(121)			NSW Dept Water and Energy	Russell Wade	The font colour is feint and does not print legibly	Darken font colour	<b>Agreed.</b>	12
(122)	20	Process 3.1 Guidance 5.2	BOM	Terry Hart	Neither Part of the NERAG provide a reference to the publication commissioned by NRAAG to provide general background on natural hazards in Australia. I am referring to the publication “Natural Hazards in Australia – Identifying Risk Analysis Requirements” published in late 2007 as a joint effort of GA, BoM, CSIRO and DoTARS (as it was then). The intention of the publication, largely fulfilled, was to provide information in a Risk Analysis framework on natural hazards in Australia suitable for the sort of risk assessments addressed by NERAG. Section 3.1 of Process (Part 1) provides some URLs to GA, BoM etc. but I think it would be helpful to specifically mention the publication given its instigation under the National Risk Assessment Framework.	<b>Suggested inclusion:</b> A useful reference on natural hazards in Australia, based on a risk assessment framework, is “Natural Hazards in Australia – Identifying Risk Analysis Requirements” (Australian Government, 2007). This publication has contributions mainly from Geoscience Australia, Bureau of Meteorology and CSIRO. For each hazard it addresses the identification of the hazard, costs and potential influence of climate change, and discusses risk analysis with information on the likelihood and consequence of each hazard.	<b>Agreed</b>	64









































































